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Dairy Science Park

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Abstracts

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Foreword

Welcome to Konya the city of Mevlana Rumi in Turkey to participate in the Fourth International Conference and Industrial Exhibition on Dairy Science Park scheduled for 1-5 November, 2017, at Selçuk University.

The event is continuation of the series held during November 2011, 2013 and 2015 at Peshawar, Pakistan. The three conferences focused on rehabilitation of the postflood Dairy Sector; Halal meat export potential of the Region and entrepreneurship based hygienic food production respectively. The fourth event of the series is being held with the theme "Achieving Food Security through Entrepreneurship Development and Biorisk Management".

Pakistan's Khyber Pakhtunkhwa and FATA are rich in livestock resources valuing US $10 billion; however, these could neither provide good economic return to producers nor quality food to consumers because of poor management. Similar wastage of natural resources is being observed throughout the world. Dairy Science Park addressed this issue through academic, developmental, business, and marketing interventions. The model has got some notable achievements and further developments are in pipeline. The United Nations have accepted DSP as #SDGAction9671 and it may prove a model for bringing prosperity to the people of the developing nations.

We expect rich participation of people from Academia, Industry, Civil Society, Government and Development Agencies, from various parts of the World. It is hoped that this event will prove as a great opportunity for Academia-Government-Industry linkages and a union between the people of East and West on the historic and spiritual city of Konya.

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List of abstracts

(Categories: AH=Animal Health; AP=Animal Production; FSE=Food Security and Ethics; MT=Meat Technology; DT=Dairy Technology; BRM=Biorisk Management; PH=Public Health; QC=Quality Control; ED=Entrepreneurship Development)

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042	PH	PHYTOREMEDIATION: AN INSPIRING AND ECONOMICAL FOR THE TREATMENT OF IRRIGATION WATER Hina Jabeen*, Aqsa Gilani, Fatima Waleed, Mushtaq Ahmad, Rakhshinda Sadiq, Akhtar Rasool hinajabeen2@gmail.com	Women University Mardan, KPK Pakistan	Oral
043	FSE	PRODUCTION AND IMMOBILIZATION OF ENDOGLUCANASES FROM MUTANT DERIVATIVE OF SUPER KOJI (ASPERGILLUS ORYZAE) ON NANO-POROUS SUPPORT Neelam Zeb*, Muhammad Hamid Rashid neelamzeb@ymail.com	Women University Mardan, KPK, Pakistan	Oral
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045	PH	AN ANALYSIS OF CORRELATION BETWEEN POOR FOOD EDUCATION AND DENTAL CARIES IN PESHAWAR Maria Nizam* Marianizam65@gmail.com	Gandhara University Peshawar, Pakistan	Oral

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054	ED	THREATENED WILD MORELS AND MOUNTAIN LIVELIHOODS IN NORTH WEST PAKISTAN Saadia Hanif* saadia.hanif@live.com	Consultant-Farm Dynamics Pakistan (pvt) Ltd, Pakitstan	Poster
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056	AH	THERAPEUTIC EFFECT OF HERBAL PLANTS EXTRACT IN BROILER CHICKEN CHALLENGED WITH COCCIDIA Subhan Ullah, Umar Sadique* druskhhatak@yahoo.com	The University of Agriculture, Peshawar, Pakistan	Oral
057	AH	GENOTOXIC AND TOXICOPATHOLOGICAL EFFECT OF AFLATOXIN B1 IN GRASS CARP (Ctenopharyngodon idella) Hayatullah Khan, Umer Saddique*, Zahoor Ul Hassan, Shakoor Ahmad, Farhan Anwar, Kamal Shah, Said Sajjad Ali Shah, Abdul Ahad and Faisal Ahmad druskhhattak@yahoo.com	The University of Agriculture, Peshawar, Pakistan	Oral
058	AH	ANAEMIA – STILL A MAJOR HEALTH PROBLEM Binish Sarwar Khan* binishasad786@gmail.com	University of Agriculture Faisalabad, Pakistan	Oral

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059	FSE	MEASUREMENT OF AWARENESS LEVELS OF ADULT INDIVIDUALS LIVING IN AKŞEHIR ABOUT FOOD SECURITY Nazik Meziyet Dilek, Ali Emrah Biyikli, Ezgi Toptaş Biyikli meziyettemel@hotmail.com	Selçuk University, Akşehir, Konya, Turkey	Oral
060	AH	TOXINOTYPING OF CLOSTRIDIUM PERFRINGENS INFECTED LAMBS AND KIDS IN DIFFERENT TOPOGRAPHIC AREAS OF KHYBER PAKHTUNKHWA, PAKISTAN Mumtaz Ali Khan* dr_mumtazkhan@yahoo.com	University of Veterinary and Animal Sciences, Lahore, Pakistan	Oral
061	AH	HEMATO-BIOCHEMICAL ALTERATIONS IN CLOSTRIDIUM PERFRINGENS INFECTED GOATS Mumtaz Ali Khan* dr_mumtazkhan@yahoo.com	University of Veterinary and Animal Sciences, Lahore, Pakistan	Oral
062	AH	QUANTIFICATION, ISOLATION AND PATHOGENOMICS F PATHOGENIC SHIGA TOXIN ESCHERICHIA COLI O157:H7 ALONG THE PRODUCTION AND SUPPLY CHAIN AROUND HUBEI OF CHINA Sher Bahadar Khan* sbvetdr@yahoo.com	The University of Agriculture, Peshawar, Pakistan	Oral
063	BRM	ANTIMICROBIAL RESISTANCE OF BACTERIA ASSOCIATED WITH RAW MILK CONTAMINATED WITH ANTIBIOTICS RESIDUES Limya .M. Warsma* areejwarsmaq3@gmail.com	University of Khartum, Sudan	Oral
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067	AH	NUTRACEUTICAL APPLICATIONS OF ZINC, MANGANESE AND COPPER IN THE METABOLISM OF THE RUMEN AND IMMUNE FUNCTION Habib-Ur-Rehman* hur_2085qta@yahoo.com	University of Balochistan (UoB), Quetta, Pakistan	Oral
068	ED	REUSE OF WASTEWATER IN AGRICULTURE RECOVERED FROM WASTEWATER TREATMENT SYSTEMS; Khush Bakht Andleeb* kbandleeb@gmail.com	National Univ Sci and Technology, Islamabad, Pakistan	Oral
069	BRM	CLINICAL & RESEARCH LABORATORIES IN PESHAWAR CITY OF KP PROVINCE: ANALYSIS OF BIOSECURITY MEASURES PREDICT INSECURITY hoorshumail.bioinformatics@kmu.ed.pk	Khyber Medical University, Peshawar, Pakistan	Oral
070	AP	ECOLOGICAL BASED FEED INVENTIONS FOR LAMBS/KIDS FATTENING MANEUVER TO EARN GREATER PROFIT REVENUES DURING EID-UL-AZHA MARKETING IN PAKISTAN Abdul Razzaq*; abdulrazzaqazrc@gmail.com	Agriculture Research in the Dry Areas (ICARDA), Jordan	Oral
071	AP	IDENTIFICATION OF NON-GENETIC FACTORS AFFECTING WEIGHTS AT BIRTH, PRE-POST WEANING, AND GREASY FLEECE PERFORMANCE OF KAJLI SHEEP IN PAKISTAN Abdul Razzaq*; abdulrazzaqazrc@gmail.com	Agriculture Research in the Dry Areas (ICARDA), Jordan	Oral

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072	AH	EPIDEMIOLOGICAL RISK FACTORS, PROPHYLACTIC AND TREATMENT ARRAYS AGAINST PESTE DES PETITS RUMINANTS (PPR) IN DG KHAN, PAKISTAN Mahboob Ali,M Avais, Jawaria Ali Khan, A Razzaq, FarmanUllah, Zia ur Rehman* drzia80@aup.edu.pk	Key Laboratory of Agricultural Animal Genetics, Breeding and Reproduction, Education, Huazhong Agricultural University, Wuhan 430070, Peoples Republic of China	Oral
073	ED	DETERMINANTS OF LABOR FORCE PARTICIPATION OF LITERATE FEMALES – SCOPE FOR CONTRIBUTION IN FOOD VALUE CHAIN Samina Naz Qureshi, Rehmat Ali, Sadia Subhan Qureshi, Shah Murad Khan, Mamoon Ahmed, Irfan ul Haq Qureshi* i.quraysh@gmail.com	Institute of Management Sciences, Peshawar-25000, Pakistan/Dairy Science Park, Peshawar	Oral
074	AP	HOMOFERMENTATIVE BACTERIAL INOCULATION, NUTRITIVE QUALITY AND ASPERGILLUS TOXINS EVALUATION OF ALFALFA SILAGE MEDICOGO SATIVA L. Nafeesa Qudsia Hanif*, Sojida Latif, Anum Iftikhar, Khush Bakht, Iffat Tohiro, Nighat Sultana, Kishwar Sultana and Mujahid Hassan nafeesahanif9@gmail.com	AgriPak Labs, Pakistan - NTI (Licensee Romer Labs, lnc., USA), Pakistan	Oral
075	PH	OCCURRENCE OF MYCOBACTERIUM BOVIS IN BOVINE MILK AND CONSUMERS' KNOWLEDGE, ATTITUDE AND PRACTICES TOWARD TUBERCULOSIS IN PESHAWAR, PAKISTAN. Irfan Khattak*, M Hassan Mushtaq, Sultan Ayaz, Sajid Ali, Sadeeq Ur Rahman, Javed Muhammad, Haq Amanullah, M Luqman Sohail, Furqan Awan, Tahir Usman irfankhattak@awkum.edu.pk	College of Veterinary Sciences & Animal Husbandry, Abdul Wali Khan University Mardan, Pakistan	Oral

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076	AP	EFFECT OF YEAST CULTURE (SACCHROMYCES CEREVISIAE) ON LACTOGENESIS IN ACHAI CATTLE Muhammad Hanif Khan, Syed M Suhail*, M Subhan Qureshi, Hayaz uddin, Ijaz Ahmed, Iftikhar Ahmed and Khalid Khan syedmuhammadsuhail@yahoo.com	Department of Livestock Management and Animal Breeding and Genetics, University of Agriculture Peshawar-Pakistan	Oral
077	AP	STUDY ON GROWTH PARAMETERS AND TRANSMISSION OF GENETIC WORTH IN LOCAL RABBITS Khalid Khan* Syed Muhammad Suhail*, Rifatullah Khan, Sarzamin Khan, Muhammad Subhan Qureshi, and Iftikhar Ahmad dr.arfi53@gmail.com	Faculty of Animal Husbandry and Veterinary Sciences, University of Agriculture, Peshawar	Oral
078	AP	IMPACT OF GRADED LEVELS OF INOCULANT ON MICROBIOLOGICAL AND NUTRITIONAL QUALITY OF CORN SILAGE Smayia Sharif, Shakira Ghazanfar, Shahid Zaman,Iffat Tahira, Nafeesa Qudsia Hanif and M Imran* m_imran766@hotmail.com	Department of Microbiology, Quaid-i-Azam University, Islamabad-45320, Pakistan	Oral
079	BRM	INVESTIGATING DISINFECTION BY-PRODUCTS FORMATION POTENTIAL OF CHLORINE AND CHLORAMINE IN DRINKING WATER Amrah Qureshi*, Imran Hashmi, Romana Khan imranhashmi@iese.nust.edu.pk	National University of Sciences and Technology, Islamabad, Pakistan	Oral

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081	MT	SOME TECHNOLOGICAL PROPERTIES OF MEAT PROTEIN Halime Alp*, Mustafa Karakaya Halime Alp halimealp@hotmail.com	Selçuk University KarapınarAydoğanlar Vocational School, Food Processing Department, Konya / Turkey	Poster
082	BRM	FROM DAIRY SCIENCE PARK TO 'ONE HEALTH' SECURITY: ACHIEVEMENTS; CHALLENGES FOR GOVERNMENT & ACADEMIA IN KHYBER PUKHTUNKHWA, PAKISTAN. Tayyab ur Rehman* tayyab.ibms@kmu.edu.pk	Khyber Medical University Peshawar, Pakistan	Oral
083	DT	INDOOR POSITIONING AND NAVIGATION USING BEACONS TECHNOLOGY Samia Subhan Qureshi*, Mehak Asad, Sidra Sayed, Mohammad Haseeb Zafar * samiasq@gmail.com	University of Engineering and Technology, Peshawar, Pakistan	Poster
084	PH	ANTIMICROBIAL PATTERN COMBINED ACTION EFFECT BASED TOOTHPASTE AND PLANT EXTRACT ON ORAL ISOLATES Muna Jalal Ali*, Essam A. Makky munajalal2@gmail.com	Universiti Malaysia Pahang, Malaysia	Oral

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086	AP	BIOFERTILIZERS FOR SUSTAINABLE AGRICULTURE AND FOOD SECURITY IN PAKISTAN Zahir Shah*, Tasneem Shah zahirshah@aup.edu.pk	Department of Soil & Environmental Sciences The University of Agriculture, Peshawar, Pakistan	Oral
087	PH	CRYPTOSPORIDIUM: AN EMERGING ZOONOSIS IN SOUTHERN KHYBER PAKHTUNKHWA (KPK),PAKISTAN Muhammad Luqman Sohail, Naimat Ullah Khan, Muhammad Hassan Saleem, Aneela Zameer Durrani, Nisar Ahmad, Ayesha Hassan, Sultan Ayaz Vet.luqman@gmail.com	University College of veterinary and Animal Sciences, The Islamia University of Bahawalpur, Pakistan	Oral
088	AP	IMPACTS OF USING IMPROVED SEED OF BERSEEM CLOVER (*TRIFOLIUM ALEXANDRINUM* L.) ON FORAGE QUALITY, YIELDS AND NET INCOME OF SMALLHOLDER DAIRY FARMERS Muhammad Shoaib Tufail* mtufail@csu.edu.au	Graham Centre for Agricultural Innovations, Charles Sturt University, Wagga Wagga 2678, NSW, Australia	Poster

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090	AP	ANIMAL BASED ORGANIC CARBON SOURCES ENHANCE CROP PRODUCTIVITY AND SOIL SUSTAINABILITY: A GOOD STRATEGY TO COMBAT FOOD SECURITY ISSUE IN DEVELOPING COUNTRIES Amanullah Jan* amanullah@aup.edu.pk	Faculty of Crop Production Science, The University of Agriculture, Peshawar- 25130	Poster
091	MT	EFFECTS OF OLIVE LEAVES ON SHELF LIFE OF BEEF PATTIES Gamze Acar*, Mustafa Karakaya, Ali Samet Babaoğlu, Kübra Ünal gamze.kolay1@gmail.com	Agriculture Faculty, Food Engineering Department, Selçuk University, Konya, Turkey	Oral
092	AH	TWO NOVEL SNPS IN STAT3 GENE ARE ASSOCIATED WITH MASTITIS SUSCEPTIBILITY IN DAIRY CATTLE Tahir Usman*, Sultan Ayaz, Irfan Khattak, Naimat Ullah Khan, Saira Gul and Atta ur Rehman tahircau@gmail.com	College of Veterinary Sciences and Animal Husbandry, Abdul Wali Khan University Mardan 23200, Pakistan	Oral
093	PH	OCCURANCE AND CAUSES OF INSOMNIA IN YOUTH OF BAHAWALPUR DIVISION OF PAKISTAN M Khurram Waqas, Anum Saqib mkhurramwaqas@gmail.com	University of Veterinary and Animal Sciences, Lahore, Pakistan	Poster
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096	AP	EVALUATION OF TWO DIFFERENT ESTROUS SYNCHRONIZATION PROTOCOLS IN ACHAI COWS Shah Murad Khan*, Younas Muhammad, Rahimullah muradstar88@yahoo.com	Faculty of Animal Husbandry and Veterinary Sciences, The University of Agriculture Peshawar	Oral
097	AP	TOTAL TRACT NUTRIENT RETENTION AND APPARENT METABOLIZABLE ENERGY OF DIFFERENT CEREALS AND THEIR VARIETIES BY QUAILS Muhammad Sohail, Asad Sultan*, Sarzamin Khan, Naila Imtiaz, Sher Bahadar Khan asadzia2003@yahoo.com	Department of Poultry Science, Animal Health, The University of Agriculture, Peshawar, Pakistan	Oral
098	AH	POINT PREVALENCE OF GASTROINTESTINAL HELMINTHES IN CATTLE AND BUFFALO IN DISTRICT KASUR, PAKISTAN Inam Ullah, M Hassan Saleem, Syed Saleem Ahmad, M Haroon Akbar, Farmanullah*, A Razzaq, Zahida Fatima, Zia Ur Rehman, M Salim farman_aup@yahoo.com	Department of Animal Breeding and Genetics, Lasbela University of Agriculture, Water and Marine Sciences, Uthal, Balochistan, Pakistan	Oral
099	AP	IMPACT OF GRADED LEVELS OF INOCULANT ON MICROBIOLOGICAL AND NUTRITIONAL QUALITY OF CORN SILAGE Smayia Sharif, Shakira Ghazanfar, Shahid Zaman, Iffat Tahira Nafeesa Qudsia Hanif and M Imran* m_imran766@hotmail.com	Department of Microbiology, Faculty of Biological Sciences, Quaid-i-Azam University, Islamabad-45320, Pakistan	Oral

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100	AP	EFFECT OF SACCHAROMYCES CEREVISIAE INCORPORATION AS PARTIAL FOR REPLACEMENT FOR SOYBEAN MEAL ON OVERALL PERFORMANCE OF BROILERS AT FINISHER PHASE M Inam*, Sarzamin Khan, Asad Sultan, Nazir A Khan, M Subhan Qureshi dr.inam@sbbu.edu.pk	Shaheed Benazir Bhutto University Sheringal Dir Upper; KPK-Pakistan	Oral
101	AP	THE SIGNIFICANCE OF SELENIUM, COBALT AND MAGNESIUM, AND THE EFFECTS OF ITS DEFICIENCY IN ANIMAL HEALTH Abdul Malik Tareen, Kaleemullah, Habib ur Rehman*, Amir Rasool, Ihsanullah kakar, M Azam kakar, Saeed ur Rehman, Kamran taj, Tauseef M Asmat, Ahmad K Tareen Habib-Ur-Rehman* hur_2085qta@yahoo.com	Department of Microbiology, University of Balochistan (UoB), Quetta, Pakistan	Oral
102	FSE	A STUDY OF STRUCTURAL CHANGES IN LIVESTOCK ECONOMY OF PAKISTAN: AN EMPIRICAL ANALYSIS Hafiz Zahid Mahmood, Asghar Ali*, Sarfraz Hassan and Khalid Mushtaq asghar.ali@uaf.edu.pk	Institute of Agricultural and Resource Economics, University of Agriculture, Faisalabad, Pakistan	Oral
103	AH	INCIDENCE RATE OF BLOOD PROTOZOANS IN DAIRY CATTLE IN KOHAT AND SURROUNDINGS M Rashid Khan,Zabita Khan and Shams-ul-Hayat* shamsulhayat55@gmail.com	Veterinary Research and Disease Investigation Centre, Hangu Road Kohat. Pakistan	Poster

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105	ED	MONOPOLISTIC COMPETITION AND PRODUCT RIVALRY: AN ANALYSIS OF PROFIT MAXIMIZATION IN DAIRY FOOD PRODUCTS Ghazala Yasmeen*, Maleeha Khan, Zeeshan Ali Khan, Muhammad Hashaam, Munawar Jan ghazala_nizam2006@yahoo.com	Women University Mardan, KPK, Pakistan	Oral
106	AH	IMPACT OF CLIMATE CHANGE ON EPIDEMIOLOGY OF TICK-BORNE HAEMOPARASITES IN AZAKHELI BUFFALO IN DISTRICT SWAT, PAKISTAN Zahida Fatima*, Amjad Khan, M Hassan Mushtaq, Mansur ud Din Ahmad, Asghar Khan, Shahid Hussain Farooqi, Abdul Razzaq, Aamanullah, M Luqman Sohail zahidavet@yahoo.com	Pakistan Agricultural Research Council, Islamabad, Pakistan	Oral
107	FSE	SODIUM SILICATE SEED PRIMING LEADS TO ENHANCED ANTIOXIDATIVE PROTECTION OF WHEAT (*TRITICUMAESTIVUM L.)* SEEDLINGS UNDER WATER-DEFICIT STRESS Arruje Hameed*, Tahir Farooq, Amjad Hameed, Sadia Javed, M Ibrahim, Munir Ahmad Sheikh arrujetahirfsd@gmail.com	Department of Biochemistry, Government College University, Faisalabad, Pakistan	Oral

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108	AH	DIETARY BUTTER INDUCES METABOLIC DISORDER IN RAT MODEL Maha Saleem, M Naeem Faisal, Haseeb Anwar, Ahmed Abdulsadiq, Aisha Mehmood, Humaira Muzaffar, Hira Javed*, Farooq Azam, Tanweer Khaliq dr.hirawarraich443@gmail.com	Institute of Pharmacy, Physiology & Pharmacology, University of Agriculture, Faisalabad, Pakistan	Oral
109	AH	CURRENT QUINOLONES SHOW SIGNIFICANT HYPOGLYCEMIC EFFECTSIN EUGLYCEMIC RABBITS Niaz Ali, Zia Ud Din, M Sajid, Sarzamin Khan, M Subhan Qureshi, Shakir Ullah, M Nabi, Waqar Ali niazpharmacist@yahoo.com	Department of Pharmacology, Institute of Medical Sciences, Khyber Medical University, Kohat, Khyber Pakhtunkhwa, Pakistan	Oral
110	FSE	BENZIMIDAZOLE AND THIOBENZIMIDAZOLE INDUCED CHANGES IN GROWTH AND ANTIOXIDANT ATTRIBUTES OF OKRA GROWN UNDER CHROMIUM STRESS Tahir Farooq*, Arruje Hameed, Azeem Sultan, Matloob Ahmed, M Sabir and Kiran Sana tahirfarooqfsd@gmail.com	Government College University, Faisalabad, Pakistan	Oral
111	FSE	BALOCHISTAN NARI MASTER AND ITS IMPORTANCE FOR THE FUTURE BEEF INDUSTRY OF PAKISTAN M. Azam Kakar*, Sana Durrani, Shakoor A. Baloch, Azizullah, M.Subhan Qureshi, Parkha Riaz Nasrullah and Mithat Direk adagul@yahoo.com	The World Bank Pakistan, 18-B, Jinnah Town, Samungli Road, Quetta, Pakistan	Oral
112	FSE	ROLE OF BIOTECHNOLOGY IN THE PROSPERITY AND FOOD SECURITY OF DEVELOPING WORLD M. Azam Kakar*, Sana Durrani, Shakoor A. Baloch, Azizullah, M Subhan Qureshi, Parkha Riaz Nasrullah and Mithat Direk adagul@yahoo.com	The World Bank Pakistan, 18-B, Jinnah Town, Samungli Road, Quetta, Pakistan	Oral

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113	ED	ROLE OF WOMEN IN LIVESTOCK AND DAIRY DEVELOPMENT IN BALOCHISTAN, PAKISTAN Sana Durrani*, Shakoor A. Baloch, Parkha Riaz Nasrullah, M.A. Kakar, Azizullah, M Subhan Qureshi and Mithat Direk ceo.two@gmail.com	Small and Medium Enterprise Development Authority, Balochistan Quetta, Pakistan	Oral
114	FSE	ENHANCING OUTPUT OF ANIMAL-ORIGIN PRODUCTS FOR ENSURING FOOD SECURITY IN PAKISTAN; A REVIEW ARTICLE Zahida Fatima*, Abdul Razzaq, Shahid Rafique, Aman Ullah, Amjad Khan, Ayesha Tahir, Rehana Kausar zahidavet@yahoo.com	Deputy Director, Animal Sciences Division, National Agricultural Research Council, Islamabad, Pakistan	Oral
115	PH	SEROPREVALENCE AND RISK FACTOR ANALYSIS OF HUMAN LEPTOSPIROSIS IN DISTINCT CLIMATIC REGIONS OF PAKISTAN M Luqman Sohail*, M Sarwar Khan, M Ijaz, Sajid Umar, Zahida Fatima, Omer Naseer vet.luqman@gmail.com	University College of veterinary and Animal Sciences, The Islamia University of Bahawalpur, Pakistan	Oral
116	FSE	TOTAL FACTOR PRODUCTIVITY GROWTH OF LIVESTOCK SECTOR IN PAKISTAN: A TIME SERIES ANALYSIS Asghar Ali*, M Ikhlaq Mansoor and Abdul Ghafoor asghar.ali@uaf.edu.pk	Institute of Agricultural and Resource Economics, University of Agriculture, Faisalabad, Pakistan	Oral
117	AH	HIGH PROTEIN DIET LOWERS BLOOD GLUCOSE LEVEL THROUGH REGENERATION OF PANCREATIC B CELLS IN DIABETIC RAT MODEL Saima Sattar, MN Faisal, Haseeb Anwar, A Abdulsadiq, Aisha Mahmood, Humaira Muzaffar, Farooq Ahmed*, A Basit, Farooq Azam Khanfarooq391@gmail.com	Institute of Pharmacy, Physiology & Pharmacology, University of Agriculture, Faisalabad, Pakistan	Oral

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118	AH	COMPARATIVE EFFICACY OF LOCAL AND PARENTAL ANTIBIOTICS FOR THE TREATMENT OF CLINICAL MASTITIS IN DAIRY BUFFALOES Tanveeer Ahmad, Ali Khera, Ejaz Ahmad, MS Akhtar and Asim Faraz tanveeruaf@gmail.com	Department of Clinical Science, FVS, BZU, Multan. Pakistan	Oral
119	FSE	NEED OF HALAAL CERTIFICATION FOR EDIBLES, BEVERAGES, MEDICINES, COSMETICS(AN OVERVIEW) Mufti Syed Naeem Badshah*,Sadia Subhan Qureshi and Shah Murad Khan ssqureshi.arabic@gmail.com	Islamia College Peshawar, Pakistan	Oral
120	PH	ANTHELMINTIC DRUGS IN THE DARK ERA OF ANTHELMINTIC RESISTANCE: REPORT FROM PAKISTAN Zia ud Din Sindhu*, Rehman Hafeez, Zafar Iqbal, M Kasib Khan, RaoZahid Abbas, Bilal Aslam, M Nisar Khan ziasandhu@hotmail.com	Department of Parasitology University of Agriculture Faisalabad, Pakistan	Oral
121	AP	USE OF MOS IN BROILER DIETS: A REVIEW M.F.A.Chacher*, Z. Kamran, U. Ahsan, S. Ahmad, H.G. Qutab ud dinand ö. Cengi vetchachar@gmail.com	Department of Obstetrics and Gynecology, Faculty of Veterinary Medicine, Ataturk University, 25240 Erzurum, Turkey	Poster
122	BRM	SERO-PREVALENCE OF ECHINOCOCCOSIS (ECHINOCOCCUS GRANULOSUS) IN CAMEL POPULATION OF SELECTED ECOLOGICAL ZONE OF BALUCHISTAN, PAKISTAN M Shafi Hasni, M Imran*, M Arsahd, M Saqib, M Sohail Sajid, M Kasib Khan, Abdul Qudoos imran.asghar@uaf.edu.pk	Department of Parasitology, University of Agriculture-38040, Faisalabad, Pakistan	Oral

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123	AH	FREQUENCY DISTRIBUTION OF TICK (ACARI: IXODIDAE) INFESTING THE LOCAL AND EXOTIC CATTLE BREEDS OF DISTRICT SWAT, KHYBER PAKHTUNKHWA, PAKISTAN Tanveer Iqbal, M Imran*, M Nisar Khan, M Sohail Sajid, Abdul Qudoos, Asim Shamim imran.asghar@uaf.edu.pk	Department of Parasitology, University of Agriculture-38040, Faisalabad, Pakistan	Oral
124	ED	DIETARY SUPPLEMENTATION OF PROBIOTIC YEAST IMPROVES GASTROINTESTINAL TRACT MICROBITA IN GROWING SAHIWAL HEIFERS Shakira Ghazanfar*, Iftikhar Ahmed, M Iqbal Anjum shakira_akmal@yahoo.com	Institute of Microbial Culture Collection, National Agricultural Research Centre, Park Road, Islamabad-45500, Pakistan	Oral
125	BRM	EPIDEMIOLOGY OF ZOONOTIC BRUCELLOSIS IN LIVESTOCK FARMS IN PAKISTAN; "AN UNDERESTIMATED PUBLIC HEALTH PROBLEM" Amjad Khan*, M Hassan Mushtaq, Habib un Nabi, Abdul Rehman, Mansur-Ud Din Ahmad, Shahid Hussain Farooqi and Asghar Khan dramjadkhan77@gmail.com	University of Veterinary and Animal Sciences, Lahore, Pakistan	Oral
126	FSE	IMPROVING ABIOTIC STRESS TOLERANCE IN CEREALS: AN INTEGRATED APPROACH FOR GLOBAL FOOD SECURITY Amjad Hameed* amjad46pk@yahoo.com	Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad, Pakistan	Oral
127	BRM	ANTIBIOTIC RESISTANCE AND RESISTANT GENES IN E. COLI BELONG TO DIFFERENT PHYLOGENETIC GROUPS SB Khan*, Zou Geng, Sher Ali, Tariq Shah, HA Ullah, Muqadar Shah, Q Ullah, Murad Ali, I Ahmad, Mumtaz Ali, Zhou Rui sbvetdr@yahoo.com	Department of Animal Health, The University of Agriculture, Peshawar, Pakistan	Oral

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128	FSE	IN VITRO ALPHA-GLUCOSIDASE INHIBITORY ACTIVITY OF DICHLORO-METHANE EXTRACT OF RANUNCULUS MURICATUS AND CASSIA FISTULA Farooq Azam*, Bashir Ahmad, M Ashraf, Faqir M, M Naeem Faisal, Wafa Majeed, Aisha Mahmood, Humaira Muzaffar, Jawad Aslam farooq.leo@hotmail.com	Institute of Pharmacy, Physiology and Pharmacology, University of Agriculture, Faisalabad, Pakistan	Oral
129	AH	THE ECONOMIC LOSSES AND BURDEN OF ENDOPARASITES IN BUFFALO AND CATTLES OF RURAL PUNJAB "AN UNDERESTIMATED EMERGING THREAT" M Hassan Mushtaq*, Ghazala Nawaz, M Nawaz Malik, Amjad K hassan.mushtaq@uvas.edu.pk	University of Veterinary and Animal Sciences Lahore, Pakistan	Oral
130	AH	SERO-EPIDEMIOLOGY OF TOXOPLASMOSIS IN PASTORAL GOAT HERDS AND SHEPHERDS IN PUNJAB, PAKISTAN M Mushtaq*, Shams-ur-Rehman, Mansur ud Din A, A Khan hassan.mushtaq@uvas.edu.pk	University of Veterinary and Animal Sciences Lahore, Pakistan	Oral
131	ED	CHALLENGES AND FUTURE SCOPE OF SME SECTOR: SPECIALLY ACCESS TO FINANCE IN BALOCHISTAN Shakoor Ahmed* shakoor@smeda.org.pk	Small & Medium Enterprises Development Authority, Quetta, Pakistan	Oral
132	AP	STUDIES ON BIOCHEMICAL ASPECTS OF SAHIWAL AND CROSS-BRED (SAHIWAL X FRIESIAN) BULLS SEMEN M Jamil Ahmad, FarmanUllah, Hafiz Ishfaq Ahmad, Zia Ur Rehman* drzia80@aup.edu.pk	Key Laboratory of Agricultural Animal Genetics, Breeding and Reproduction, Huazhong Agricultural University, China.	Oral

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133	AP	EFFECT OF FEEDING DIFFERENT LEVELS OF UREA TREATED SUGAR BEET PULP VERSUS UNTREATED SUGAR BEET PULP ON WEIGHT GAIN OF BULKHI SHEEP UNDER THE SUBTROPICAL REGION OF DISTRICT DERA ISMAIL KHAN Shoaib Sultan*, Saqib Ali Rustham shoaibnutr@gmail.com	Department of Animal Nutrition, The University of Agriculture Peshawar, Pakistan	Oral
134	AP	STUDY PATTERN OF ASSORTATIVE MATING IN LOCAL RABBITS Inamullah, S M Suhail, Sarzamin Khan, M.Subhan Qureshi and Khalid Khan syedmuhammadsuhail@yahoo.com	Faculty of AH&VS The University of Agriculture Peshawar, Pakistan	Oral
135	PH	INCIDENCE OF DRUG RESIDUES IN MILK AND MEAT AT DIRSTRICT KARAK, KP, PAKISTAN SafatUllah, Shakoor Ahmad*, Umersadique, Hamayun Khan, Sher Bahadur, Zahir Shah, Murad Ali Khan and Ijaz Ahmad shakoor.ahmad@aup.edu.pk	Department of Animal Health, The University of Agriculture Peshawar, Pakistan	Oral
136	FSE	PAKISTAN WATER RESOURCES: DEVELOPMENT AND CONSERVATION NEEDS FOR SUSTAINABLE CROP AND LIVESTOCK PRODUCTION M Abdullah, Masood A Shakir*, M Naveed masoodshakir7@gmail.com	Ayub Agricultural Research Institute, Faisalabad, Pakistan	Oral
137	PH	CONTRIBUTION TO THE STUDY OF SOME LIPID AND LIPOPROTEIN PARAMETERS OF THE ORGANS IN OBESE RATS SUPPLEMENTED WITH GREEN MICROALGAE. Benyoub N*, Saidani F ,Baba Ahmed Fz benyoubnoreddine@yahoo.fr	Laboratory of physiology, physiopathology, and biochemistry of nutrition University of Tlemcen Algeria	Poster

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138	AP	EFFECTS OF SOME FEED ADDITIVES ON IN VITRO DIGESTION, RUMEN FERMENTATION AND METHANE PRODUCTION IN DIFFERENT FORAGE AND CONCENTRATED FEEDS Necip Gürhan Şekerci*, Birol Dağ, Yusuf Konca, Selma Büyükkiliç Beyzi, Mahmut Kaliber akidal_@hotmail.com	Selçuk University, Faculty of Agriculture, Department of Animal Science, Konya/Turkey	Poster
139	AP	ROLE OF FEED ADDED ANISEED AS IMMUNUMODULANT AND GROWTH PROMOTER IN BROILER CHICKS Riaz Ahmad, FarmanUllah*, Abdul Razzaq, Islam zeb Khan, M Salim farman_aup@yahoo.com	Key Laboratory of Agricultural Animal Genetics, Breeding and Reproduction, Huazhong Agricultural University, Wuhan 430070, People's Republic of China	Poster
140	AH	VACCINE; A RATIONAL CONTROL STRATEGY FOR MYCOPLASMA BOVIS INFECTION IN CATTLE Farhan Anwar Khan*, Xi Chen, Ijaz Ahmad, Sher Bahadar Khan, Zahir Shah, Zia ur Rehman, Shakoor Ahmad, Umar Sadique, Aizhen Guo drfarhananwar2003@yahoo.com	Department of Animal Health, The University of Agriculture, Peshawar, Khyber Pakhtunkhwa, 25120, Pakistan	Oral
141	AH	HOMOLOGY MODELLING AND MOLECULAR DOCKING STUDY OF CORTICOTROPHIN RELEASING HORMONE: A SUCCESSFUL APPROACH TO TREAT THE STRESS RELATED DISEASES. Shahid Ullah* shahidullah@hust.edu.cn	College of Chemistry and Env Engg, Shenzhen University, Shenzhen,Guangdong, 518060, P. R. China	Poster
142	ED	NEW TECHNOLOGY POSSIBILITIES AT DAIRY FARMS FOR PROFITABLE PRODUCTION Cahit Güngör Serap Göncü* sgoncu@cu.edu.tr	Çukurova Üniversity Agriculture Faculty Animal science Department Adana Turkey	Poster

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143	BRM	MOLECULAR EPIDEMIOLOGY OF RESPIRATORY VIRUSES IN COMMERCIAL CHICKEN FLOCKS IN PAKISTAN FROM 2014 THROUGH 2016 Sajid Umar*, Angélique Teillaud, Hassan Bin Aslam, Jean-Luc Guerin1, Mariette F. Ducatez, IHAP s.umar@uaar.edu.pk	Université de Toulouse, INRA, ENVT, 31076 Toulouse, France	Oral
144	BRM	AVIAN METAPNEUMOVIRUS VACCINE MODIFIES VIRUS SHEDDING AND IMMUNE RESPONSES OF AVIAN INFLUENZA (H9N2) INFECTION IN COMMERCIAL TURKEY Sajid Umar*, Qamar-un-Nisa, Abdul Ghafar, M Ali Shah, M Luqman Sohail, M Asif Yaseen. s.umar@uaar.edu.pk	Department of Pathobiology, PMAS Arid Agriculture university Rawalpindi (46000), Pakistan	Oral
145	FSE	RED MEAT PRODUCTION TRENDS IN MONGOLIA Maralma Bayarsaikhan, Mithat Direk* mithatdirek@gmail.com	Selçuk University, Department of Agric Economics, Konya-Turkey	Oral
146	AH	REAL-TIME FLUORESCENCE LOOP-MEDIATED ISOTHERMAL AMPLIFICATION FOR DETECTION OF hCD39 IN TRANSGENIC PIG Jin Li, Wei Liu, Jun-chao Li, Hong-yan Jin, GangLi * ligang03@caas.cn	Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing 100193,China	Oral
147	DT	EFFECT OF SMOKING ON PHYSICO-CHEMICAL PROPERTIES AND SENSORY ATTRIBUTES OF MUDAFFARA CHEESE USING CORIANDRUM SATIVUM Ibtisam E. M. El Zubeir* Ibtisammohamed@hotmail.com	Department of Dairy Production, Faculty of Animal Production, University of Khartoum, P. O. Box 321, Khartoum, Sudan	Oral

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148	AP	EFFECT OF GONADOTROPIN RELEASING HORMONE, HUMAN CHORIONIC GONADOTROPIN AND FLUNIXINE MEGLUMINE ON PREGNANCY RATES IN SAHIWAL COWS Muhammad Saleem Akhtar*, Tanveer Ahmad, Laeeq Akbar Lodhi, Mushtaq Hussain Lashari, Ejaz Ahmad, Masood Akhtar drsaleem45@yahoo.com	Department of Clinical Sciences, Faculty of Veterinary Sciences, Bahauddin Zakariya University, Multan, Pakistan	Oral
149	AP	IMMUNOSTIMULANT AND HEPATOPROTECTIVE EFFECT OF POLY HERBS (WITHANIASOMNIFERA, LIQUORICE, ALLIUM SATIVUM AND BERBERISLYCIUM) MIXTURE EXTRACT IN BROILER PRODUCTION Noor ul Baseer*, F Ullah, Abdul Razzaq, MA Hussain. M Salim farman@webmail.hzau.edu.cn	Faculty of Animal Husbandry and Veterinary and Animal Sciences, The University of Agriculture, Peshawar, Pakistan	Poster
150	AH	THE FACTORS REGULATING MELANOGENESIS: A REVIEW Hira Sajjad Talpur*, Iqra Bano drhirasajjad@gmail.com	Key Laboratory of Agric Animal Genetics, Huazhong Agric Univ, Wuhan-430070, People's Republic of China	Poster
151	AH	A CROSS SECTIONAL SURVEY ON GASTROINTESTINAL PARASITES IN BACKYARD POULTRY IN PAKISTAN MH Mushtaq*, Ghazala Nawaz, MN Malik, Amjad Khan hassan.mushtaq@uvas.edu.pk	Department of Epidemiology, University of Veterinary and Animal Sciences, Lahore, 54000, Pakistan	Oral
152	FSE	PERMISSIBLE AND IMPERMISSIBLE FOOD/DRINK IN LIGHT OF MAZAHIB-E-ARBA'A Dr Rashida Parveen* drrashidaisb@gmail.com	Women University Mardan, KPK, Pakistan	Oral

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153	ED	A SIMPLE AND SENSITIVE HPLC METHOD FOR DETERMINATION OF CEFQUINOME IN PLASMA: APPLICATION TO PHARMACOKINETIC STUDY IN CATTLES. Ijaz Ahmad*, Haihong Hao, Jun Li, Pascal Sanders, Sher Bahadar Khan, Farhan Anwar Khan, Zahir Shah, Shuyu Xie, Saeed Ahmed, Lingli Huang, Zonghui Yuan drijaz@aup.edu.pk	Department of Animal Health, The University of Agriculture Peshawar, Pakistan	Oral
154	FSE	ESTIMATING THE CROP LOSSES CAUSED BY FUSARIUM WILT OF CHILI AND ITS CONTROL BY TARGETING MITOCHONDRIAL RESPIRATORY SYSTEM WITH NOVEL INHIBITORS USING COMPUTER AIDED DRUG DESIGNING Sehrish Iftikhar*, Ahmad Ali Shahid, Kiran Nawaz, Waheed Anwar Sehrish.iftikhar05@gmail.com	Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan	Oral
155	PH	ISOLATION AND CHARACTERIZATION OF BACILLUS SPECIES EXHIBITING ANTIBACTERIAL ACTIVITY FROM LAKKI MARWAT, PAKISTAN Anum Tabassum*, M Qasim, H Rehman, Nayab & Asia Begum anum.microbiologist@yahoo.com	Women University Mardan, KPK Pakistan	Oral
156	PH	ANTIDIABITIC EFFECTS OF CAMEL MILK: SHORT AND LONG-TERM STUDIES ON MATERNAL UTERUS AND NEONATES SELECTED ORGANS Anas S Qureshi*, M K Ateeq, M Usman, MZ Ali, Muqader Shah, WA Khamas muqader849@aup.edu.pk	Department of Anatomy, University of Agriculture, Faisalabad, Pakistan	Oral

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157	AH	TOXICOPATHOLOGICAL EFFECT OF DIETRY OCHRATOXIN A IN QUAILS (COTURNIX JAPONICA) Faisal Ahmad*, Umer Saddique drdfaisal.vet31@gmail.com	FAHV&S. The University of Agriculture Peshawar, Khyber Pukhtunkhwa-Pakistan	Oral
158	BRM	COMPARATIVE DISTRIBUTION AND MORPHOLOGICAL FEATURES OF FIVE SPECIES OF THE GENUS PIPISTRELLUS OF MALAKAND DIVISION M Salim*, Arshad Javid, Sajid Ali, FarmanUllah, Ahmad Hussain, Ume Habiba and Momen Khan mohammadsalim@uoh.edu.pk	Department of Forestry and Wildlife Management, University of Haripur, Khyber Pakhtunkhwa, Pakistan	Oral
159	AP	EFFECTS OF FORMER SIZMA (KONYA) MERCURY MINE ON MILK PRODUCTION Fatih Ahmet Göktürk* fatihahmetgokturk@hotmail.com	Selçuk University, Environmental Engineering Department, Konya Turkey	Oral
160	BRM	GOVERNMENT- ACADEMIA: MISSING LINKS AND TRUST DEFICIT WITH SPECIAL REFERENCE TO BIORISK MANAGEMENT IN KP PROVINCE Farzana Nazli* Farzana562@gmail.com	Education consultant, Development sector KP Peshawar	Oral
161	FSE	THE WORK SAFETY APPLICATIONS IN DAIRY CATTLE FARMS Serap Göncü*, Gülcan Türkoğlu sgoncu@cu.edu.tr	Çukurova Üniversity Agriculture Faculty Animal science Department Adana Turkey	Oral
162	MT	EFFECTS OF GRAPE LEAF POWDERS DRIED BY MICROWAVE ENERGY ON SOME QUALITY PROPERTIES OF BEEF PATTIES AlimeYaldız*, CmSarıçoban, Kübra Üna alimeyldz-92@hotmail.com	Agriculture Faculty, Food Engineering Department, Selçuk University, Konya, Turkey	Poster

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163	MT	EFFECTS OF GROUND CRESS AND FLAX SEEDS ON SOME QUALITY PROPERTIES OF TAIL FAT GülsümAtasoy, Cemalettin Sarıçoban, AlimeYaldız* alimeyldz-92@hotmail.com	Agriculture Faculty, Food Engineering Department, Selçuk University, Konya, Turkey	Poster
164	FSE	MICROBIAL POTENTIAL (METHANE PRODUCING MICROBE) ON METHANE PRODUCTION AT RICE-ROOTED AREA ON THAILAND JASMINE RICE FIELD Sansanee Chawanakul* cha.sansanee@gmail.com	Department of Biological Sciences, Faculty of Science, Ubon Ratchathani University, Warinchamrab district, Ubon Ratchathani 34190, Thailand	Oral
165	DT	THE EFFECT OF SOYBEAN OR FLAXSEED OILS TO AFFECT FEED UTILIZATION, MILK PRODUCTION AND COMPOSITION, IN LACTATING COWS AM Kholif*, M Abdel Aziz, AF Sayed, AE Kholif, Hoda Hassan, GA Gouda, Layla Khaled, M Fawzy; am_kholif2000@yahoo.co.uk	Dairy Science Department, National Research Centre, Dokki, Giza, Egypt	Oral
166	DT	IMPLEMENTATION OF MODEL FOR IMPROVEMENT (PDCA-CYCLE(IN DAIRY LABORATORIES Abdelkader M Kholif*, Dina S. Abou el Hassan, MA Khorshid, Elsayed A Elsherpieny am_kholif@hotmail.com	Dairy Science Department, National Research Centre, 12622, Dokki, Giza, Egypt	Oral
167	AP	EFFECT OF SPRING MAIZE GENOTYPES HARVESTED AT DIFFERENT MATURITY STAGES ON YIELD, NUTRIENT COMPOSITION, FIBER DIGESTIBILITY AND SILAGE FERMENTATION QUALITY Nadar Khan* , Nazir A Khan, Nazir Ahmad, M.Subhan Qureshi, MNM Ibrahim nadar73vet@gmail.com	The University of Agriculture Peshawar, Khyber Pakhtunkhwa, Pakistan	Oral

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168	AP	SCREENING OF TRADITIONAL AND NOVEL SUMMER MAIZE CULTIVARS AT DIFFERENT HARVEST MATURITY FOR SILAGE PRODUCTION IN NORTHERN AREAS OF PAKISTAN Nadar Khan*, Nazir Ahmad Khan, Nazir Ahmad, M.Subhan Qureshi and M. N.M. Ibrahim nadar73vet@gmail.com	The University of Agriculture Peshawar, Khyber Pakhtunkhwa, Pakistan	Oral
169	FSE	MILK PRODUCTION AROUND KONYA CITY CENTRE AND ITS RELATION WITH REGION ENVIRONMENT Sukru Dursun* sdursun@selcuk.edu.tr	Selçuk University, Environmental Engineering Department, Konya, Turkey	Oral
170	AP	INFLUENCE OF FLAXSEEDS ON RUMINAL FERMENTATION AND MILK PRODUCTION Syeda Maryam Hussain*, Valdo Herling, Paulo Henrique Mazza and Marcos Barbosa maryamhussain05@gmail.com	Faculty of Animal Sciences and Food Engineering, University of Sao Paulo, Brazil	Oral
171	FSE	DAIRYSECTOR IN YEMEN – A DRIVING FORCE FOR FOOD SECURITY Hafsa AL Yamani*, Dehouegnon Jerry Agossou, Nazan Koluman m7y11@ymail.com	Department of Animal Science, Çukurova University, 01330, Adana Turkey	Oral
172	FSE	TRAJECTORY OF WOMEN SEXUAL IMPEDIMENTS: A CONSTITUTIONAL PERSPECTIVE Frahat Jabeen, Ansa Javed Khan* ansaj165@gmail.com	Women University Mardan	Oral
173	FSE	POPULATION ESTIMATION AND THREATS TO INDIAN HARE (LEPUSNIGRICOLLIS) IN RAKH-SARDARAN GAME RESERVE, DISTRICT HARIPUR. Murtaza Ali, Ume Habiba*, M Salim, Ahmed Hussain, Farmanullah ume.habiba8@gmail.com	Department of Forestry and Wildlife Management, University of Haripur, Khyber Pakhtunkhwa, Pakistan	Poster

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174	ED	EFFECTS OF THE DIETS WITH DIFFERENT LEVELS OF PROSO MILLET (*PANICUMMILIACEUM*) ON THE PERFORMANCE, EGG QUALITY, HATCHABILITY AND BONE BIOMECHANICPROPERTIES OF BREEDING JAPANESE QUAILS Wael Majeed Murshed Murshed*, Yılmaz B Ahtiyarca waelmajeed422@yahoo.com	Department of Animal Science, Faculty of Agriculture, Selçuk University, Konya, TURKEY	Oral
175	FSE	EVALUATION OF LIVESTOCK PRODUCTION IN ÇELEBILER VILLAGE WITH SPECIAL EMPHASIS ON PASTURE Sema Yaman* semayaman@ohu.edu.tr	Niğde Ömer Halisdemir University Faculty of Agricultural Sciences and Technologies, 51240 Niğde, Turkey	Oral
176	FSE	USE OF PROPOLIS IN RUMINANT NUTRITION Sema Yaman*, Sibel Canoğulları Doğan, İlknur Uçak semayaman@ohu.edu.tr	Niğde Ömer Halisdemir University, Faculty Agric Sci & Tech, Niğde, Turkey	Poster
177	FSE	AN ALTERNATIVE PROTEIN SOURCE-INSECTS IN ANIMALNUTRITION Mustafa Boğa, Sema Yaman* semayaman@ohu.edu.tr	Niğde Ömer Halisdemir Üniversitesi Vocational School, Bor, Niğde, Turkey	Poster
178	BRM	ANTIMICROBIAL RESISTANCE IN THE FOOD CHAIN IN DEVELOPING COUNTRIES AND PUBLIC HEALTH CONSEQUENCES: A CALL FOR ACTION Sahibzada Shafiullah*, M Subhan Qureshi sshafiullah@csu.edu.au	Charles Sturt University, Wagga Wagga, NSW 2678. Graham Centre for Agricultural Innovation	Poster
179	MT	DETERMINATION OF THE EFFECTS OF THE ADDITION OF HYSSOP POWDER ON SOME QUALITY PROPERTIES OF BEEF PATTIES Şeyma Cabi Çarşi*, Cemalettin Sariçoban, Alime Yaldiz seymacarsi@gmail.com	Agriculture Faculty, Food Engineering Department, Selçuk University, Konya, Turkey	Oral

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180	BRM	FROM DAIRY SCIENCE PARK TO 'ONE HEALTH' SECURITY: CHALLENGES& EXPECTATIONS FOR GOVERNMENT-ACADEMIA-INDUSTRY IN KHYBER PAKHTUNKHWA, PAKISTAN Tayyab Rehman* tayyab.ibms@kmu.edu.pk	Institute of Basic Medical Sciences, Khyber Medical University, Peshawar, Pakistan	Oral
181	FSE	WHOLE GENOME SEQUENCING OF CATTLE BREEDS FROM PAKISTAN AND THEIR USE IN GENOMIC SELECTION FOR ENHANCING MILK AND MEAT PRODUCTION Shahid Mansoor* shahidmansoor7@gmail.com	National Institute for Biotechnology and Genetic Engineering (NIBGE), P O Box, 577, Jhang Road, Faisalabad, Pakistan	Oral
182	AP	THE EVALUATION OF SUNFLOWER HARVEST WASTE AS SILAGE Mehmet Yılmaz, Selma Büyükkılıç Beyzi*, Yusuf Konca sbuyukkilic@hotmail.com	Erciyes University, Faculty of Agriculture, Department of Animal Science, 38039 Kayseri, Turkey	Oral
183	AP	CHEMICAL AND NUTRITIONAL CHANGES IN SORGHUM SILAGE ASSOCIATED WITH BARLEY GRAIN AND MOLASSES SUPPLEMENTATIONS Yusuf Konca, Selma Büyükkılıç Beyzi* sbuyukkilic@hotmail.com	Erciyes University, Faculty of Agriculture, Department of Animal Science, 38039 Kayseri, Turkey	Poster
184	AP	GENETIC INVESTMENT IN DAIRY BUFFALO: A CASE STUDY FROM EGYPT Ibrahim Soliman* ibsoliman@hotmail.com	Faculty of Agriculture, Zagazig University, Egypt	Oral
185	ED	ENTERPRISE STRUCTURE OF WATER BUFFALO BREEDING IN TURKEY Orhan Ermetin orhan.ermetin@bozok.edu.tr	Bozok University, Faculty of Agriculture, Department of Animal Science, Yozgat – Turkey	Oral

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186	AH	HFD INDUCED METABOLIC DISORDER FOLLOW OXIDATIVE STRESS IN DROSOPHILA MELANOGASTER Muhammad Naeem Faisal*, Cristina Fink and Thomas Roeder m.naeem.faisal@uaf.edu.pk	Institute of Pharmacy, Physiology and Pharmacology, University of Agriculture Faisalabad, Pakistan	Oral
187	DT	PRODUCTION AND PROCESSING OF MILK-ENVIROMENTAL IMPACT ASSESSMENT (EIA)Menekşe Bulut* gidabenefse@gmail.com	Igdir University Engineering Faculty, Food Engineering Department Sehit Bulent Yurtseven Campus 76000, Igdir Turkey	Poster
188	DT	THE INGREDIENT OF ROYAL JELLY Menekşe Bulut* gidabenefse@gmail.com	Igdir University Engineering Faculty, Food Engineering Department Sehit Bulent Yurtseven Campus 76000, Igdir Turkey	Poster
189	DT	GEOGRAPHIC MAPPING OF REGISTERED CHEESE IN TURKEY Menekşe Bulut* gidabenefse@gmail.com	Igdir University Engineering Faculty, Food Engineering Department Sehit Bulent Yurtseven Campus 76000, Igdir Turkey	Oral
190	ED	USAGE OF OZONE IN FOOD PROCESSING Manolya Eser Oner* manolya.oner@alanya.edu.tr	Alanya Alaaddin Keykubat University Food Engineering Department Alanya/ Antalya Turkey	Oral
191	ED	THE IMPORTANCE OF COLORSTRUM ON NEONATE DEVELOPMENT IN RUMINANTS Halil İbrahim Azakli, Mehmet Akif Çam* makifcam@omu.edu.tr	Ondokuz Mayis University, Department of Animal science, Atakum-Samsun, Turkey	Oral

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192	ED	COMPARISON OF FREEZE-DRYING AND SPRAY-DRYING TECHNOLOGIES IN FOOD DRYING METHODS Hülya Şen Arslan*, Sabire Yerlikaya hulyasen3842@hotmail.com	Food Engineering Department, Engineering Faculty, Karamanoglu Mehmetbey University, Karaman, Turkey.	Poster
193	FSE	PROBLEMS AND SOLUTION PROPOSALS FOR AGRICULTURAL COOPERATIVE MEMBERS in AKSARAY PROVINCE Zeliha Çay*, Mithat Direk Selçuk University, Agriculture mithatdirek@gmail.com	Faculty, Department of Agricultural Economics, Konya-Turkey	Poster
194	FSE	PROMOTING EFFECTIVE COMMUNITY MEDIA SERVICES FOR GENDER EQUALITY AWARENESS FOR ENHANCED AGRICULTURE AND FOOD SECURITY EAST AFRICA Wilson Okaka and Nabalegwa Muhamud Wambede* nupap2000@yahoo.com	Kyambogo University, Uganda	Poster
195	BRM	EFFECTS ON HUMAN HEALTH OF PHYTOCHEMICAS USED AS FUNCTIONAL FOOD Hülya Şen Arslan*, Sabire Yerlikaya hulyasen3842@hotmail.com	Food Engineering Department, Engineering Faculty, Karamanoğlu Mehmetbey University, Karaman, Turkey	Poster
196	BRM	DETERMINATION OF THE EFFICIENCY OF TOXIN BINDERS IN RUMEN IN VITRO CONDITIONS Nihayet Fadime Yalcin*, Bulent Kabak, Tulay Avci, Mehmet Kurşat Isik nfadimeyalcin72@yahoo.com.tr	Veterinary Control Institute Directorate, Department of Toxicology Laboratory, Konya, Turkey	Poster

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BRM-001

SEROPREVALENCE AND POTENTIAL RISK FACTORS ASSOCIATED WITH BOVINE BRUCELLOSIS UNDER DIVERSE PRODUCTION SYSTEMS IN PAKSITAN

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ABSTRACT

Brucellosis is one of the major problems affecting milk producing animals which deteriorates the health of livestock all over the world including Pakistan. It is a disease of zoonotic significance causing disease in humans. In animals economic loss is caused by infertility, orchitis, abortions and synovitis. In this study, 175milk (90 from cattle & 85 from buffaloes) and 402serum (208 from cattle & 194 from buffalo) samples collected from cattle and buffaloes in three selected districts (Narowal, Gujranwala and Gujrat) of the Punjab, Pakistan were investigated for antibrucella antibodies during the months of February to June, 2015. Milk samples were tested by Milk Ring Test (MRT), while serum samples were initially screened with Rose Bengal Plate agglutination test (RBPT) and confirmed with Indirect Enzyme Linked Immunosorbant Assay (i-ELISA) by i-ELISA(IDEXX Brucellose Serum X2 Ab Test, Switzerland). In total 21.7% milk samples were positive (cattle 22.2% and buffaloes 21.1%). Brucella antibodies were detected in 16.4% of tested sera with RBPT (cattle 18.8% and buffaloes 13.9%) and 11.4% by i-ELISA (cattle 13.5% and buffaloes 9.3%), respectively. The potential risk factors associated with brucellosis were studied. The iELISA seroprevalence in aborted, pregnant and lactating animals were 31.6%, 13.5% and 21.1%, respectively and in animals with repeated breeding, retained placenta and birth of weak calves were 11.3%, 12.3%and 15.3%, respectively. Our results provide baseline information on the epidemiology of bovine brucellosis and its potential risk factors in Punjab, Pakistan, which will ultimately help to improve control programs in the country. The higher seroprevalence of brucellosis indicates its relevance for public health.

Keywords: Bovine tuberculosis, seroprevalance, Milk, ELISA

BRM-002

CRIMEAN CONGO HEMORRHAGIC FEVER (CCHF) IN THE SCENARIO OF DSP-BIORISK MANAGEMENT IN PAKISTAN

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ABSTRACT

The present condition of Crimean-Congo hemorrhagic fever (CCHF) is deteriorating in Pakistan. The tick-borne Nairovirus causing CCHF has taken a greater death toll on human as well as cattle, compared to last year. The disease, first time activated during the 1944 in Crimea killing 200 army officers of the Soviet Union, has now a vast geographical dispersal becoming endemic in 30 countries across the globe which includes Africa, Middle East, Asia and the Balkans. Ticks from the Bunyaviridae family especially the genus Hyalomma known to be primarily involved in its spread and an active carrier of the virus, cause it among animals and humans by a single bite, while the infected animals through skin contact, slaughter houses, veterinarians and other agricultural workers, expose the incidence of the disease to other animals and humans. Similarly, human-to-human transmissions can occur by blood contact, exchange of bodily fluids and secretions of the infected person, less precautionary hospital environment with CCHF patients. The tick-bite within a day or few (1 to 7 days) causes fever, joint pain, headache, vomiting, dizziness, diarrhea, red spots on the upper mouth palate and sore throat. Treatment includes supportive care of symptoms and eliminating secondary infections. Even though, the drug Ribavirin is the lone FDA approved cure so far, yet, there is no vaccine made, besides, the tick spell on animal followed by disease incidence, to the transmission to other ticks, usually goes undetected. The rudimentary cause behind the highest prevalence of CCHF in Balochistan is their not only their local cattle, but also, poor quarantine laws and health investigation on the borders with Iran and Afghanistan which are the top possible route of virus dispersal across border lines. 58% of CCHF positive patients of Balochistan have prospectively reported to have been to remote areas of Afghanistan, in parallel, 13 animals out of 21 randomly selected animals from Afghanistan and Iran's neighboring areas after ELISA tests revealed to be CCHF positive. Precautionary measures including medicinal care of cattle only last about a week or two which is worth than having no cure at all, on the other hand, human infections can be prevented by following the DSP Biorisk Management safety measures to avoid exposure to the disease and raising responsiveness on district and provincial level and acknowledge the population about this global concern before it becomes an epidemic.

Keywords: CCHF, DSP, Bio-risk Management, Zoonotic Diseases, Pakistan.

BRM-003

Quality Assesment of Pasteurized milk through the incidence of spore former Bacteria in Pasteurized Milk

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ABSTRACT:

Milk is a complete nutritious diet with very short shelf life. In order to extend the shelf life of milk a processing technique Pasteurization is used. It kill all pathogenic organisms from milk and make it safer for human consumption. In this process, spore former bacteria (especially genus Bacillus, Paenibacillusand Clostridium) survive consequently shorten the shelf life of milk. In order to access the microbial quality of pasteurized milk available in local market of Lahore,sixdifferentmilk brands were analyzed for the enumeration of psychrotrophic, mesophilic and thermophilic spore formers (Bacillusand Clostridium) and total plate count.Total spore count was obtained by combining the individual spore results and further identification was done by morphological techniques(spore staining, morphological, biochemical identification tests). Samples of six available brands (A,B,C,D,E and F) were collected for the enumeration of spore former and total plate count. Spore former bacteria were cultivated using plate agar method on selective and mixed agar. The date was statistically analysed. Milk brand D showed less numbers of Total Plate Count (CFU/ml) as compared to other brands, while the thermophilic, mosophilic and psychortrophic bacilli numbers were less in Brand E, A and D respectively. On the other hand the enumeration of thermophilic and mesophilic clostridia were less in Brand D in both cases.
It shows all brands were highly contaminated so,we can imagine the shelf life, extent of contamination and level of cross contamination of pasteurized milk, which is being sold in the local market of Lahore, with number of total spore former and Total plate count.

Keywords: Pasteurized milk, total plate count, spore former microbes, cross contamination

ED-004

CHALLENGES AND FUTURE SCOPE OF OSTRICH (STRUTHIOCAMELIUS) FARMING IN PAKISTAN

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ABSTRACT:

Ostrich (Struthiocamelius) is a flightless bird, which has potential to produce low cholesterol, high quality food, and provide valuable inputs for utensils, clothing, and adornment. Now a days there is a growing scope of ostrich farming for the procurement of meat, feathers, eggs and skin production. There is a huge potential of extensive ostrich farming in Pakistan because abundant facilities regarding building design, bedding materials, fencing, environmental influences including sunlight are available throughout urban and rural areas of Pakistan. The breeding system needs special attention from academia and industry to study and interpret factors that influence hatchability. The major diseases and their management include Ostrich parasites (Ostrich wireworm/ stomach worm, nematodes, tapeworm, protozoa, eye fluke and external parasites), bacterial diseases(botulism, necrotic enteritis, Omphalitis and yolk sacculitis, Campylobacteriosis and Anthrax), viral diseases (Avian influenza, Newcastle disease, Avian pox), Mycotic diseases (Candidiasis, Aspergillosis), nutritional disorders (Deficiency of vitamin A, vitamin D, vitamin E, vitamin B and manganese). Economics/profits of ostrich farming comes through sale of ostrich eggs, sale of live ostriches and sale of ostrich products. Future of the ostrich industry in Pakistan is bright as there is a large scale market size, established leather processing and manufacturing, low feed cost per ostrich, best feed-to-weight ratio, low labour cost. Most Pakistanis like meat including farming based chicken, new and innovative investment opportunity for investors, potential for high production levels of breeder birds, potential for good food conversion efficiency in slaughter birds, Longevity of breeder birds leads to long-term commitment of producers to the future of the farmed ostrich. Livestock and Dairy Development Department, Government of Punjab with collaboration of University of Veterinary & Animal sciences, Lahore is involved to boost ostrich farming by outreach ostrich farming, giving incentives, provision of day old ostrich chicks, small loans and purchase of ostrich meat at a sustainable price.

Keywords: Ostrich farming, Potential, scope, diseases

BRM-005

ESTIMATION OF COMPOSITION, ADULTERATION AND MICROBIAL LOAD IN RAW MILK SAMPLES COLLECTED FROM DAIRY FARMS AND URBAN AREAS OF LAHORE DISTRICT, PAKISTAN

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ABSTRACT

Milk is a translucent white liquid rich in nutritional profile from mammary glands of animals which make it perfect source diet required for growth and maintenance in infants, children and adults. But for sake of higher profit it is severely polluted through poor processing and hazardous chemicals which ensure it a birthplace of many diseases. Three hundred and sixty raw milk samples were collected from urban areas (ten areas of Lahore city) and dairy farms (ten dairy farms located in Lahore) with an interval of two months. Samples were analyzed for the estimation of adulterants, chemical composition and total microbial load. The results indicated that added water was positive for 100% samples of urban areas and no sample was found positive for the added water for Dairy Farms. Adulterants like Formalin, Sugar and Urea were not detected in any sample while Starch, added water, Hydrogen peroxide, CO3-/HCO3 and NaCl were detected in 4.667, 32.555, 2.00, 22.667, and 55.333% samples of raw milk from urban areas respectively. None of the adulterants were detected in dairy farm milk samples. The tests carried out for evaluating the chemical composition and physico-chemical properties of the raw milk samples from urban areas showed the following mean values of 2.758±0.288, 2.629±0.180, 1.270±0.077, 7.133±0.302, 6.456±0.264, 0.472±0.022 for lactose, fat, protein, TS, pH, ash respectively. Milk samples from the dairy farms recoded mean values of 4.816±0.321, 5.023±0.385, 3.363±0.180, 13.188±0.656, 6.669±0.265, 0.749±0.051 for lactose, fat, protein, TS, pH, ash respectively. Mean values of total plate count was 5.206±0.283 cfu/ml for urban areas raw milk samples and 4.674±0.273 cfu/ml for the dairy farm milk samples. The results depicted that raw milk samples analyzed from urban areas did not conform to even the minimum legal standards and possess adulterant chemicals which are noxious to health.

Keywords: Milk, adulteration, Lahore

AH-006

ANTHELMINTIC AND ANTIPROTOZOAL ACTIVITIES OF CALOTROPIS PROCERA UNDER FIELD CONDITIONS

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ABSTRACT

Plants are important sources of drugs and have been used for the treatment of various ailments in human and animals. Antipyretic, analgesic, anti-inflammatory, antispasmodic, antidiarrheal and anticoccidial effects of *Calotropis procera* leaves have been reported. Presences of cardiac glycosides, alkaloids, flavonoids and triterpenes have been detected in its different parts. Anthelmintic activity of *C. procera* leaves was evaluated against nematodes of range land sheep under field conditions. Parasitic burden was evaluated by counting eggs per gram (EPG) of faces by McMaster technique before and after medication. Moxidectin (0.2mg/kg I/M) was used as positive control. Chloroform extract of *C. procera* leaves was administered at various doses (3, 6 and 12mg/kg) orally. Dose depended effect in the reduction of EPG was observed 91.4 % at the dose of 12mg/kg at day 14 post medication while with Moxidectin it was 93.3 %. No significant differences were observed in the renal (creatinine, urea) and liver function (ALT, AST, ALP) tests which were in the normal range in groups of *C.procera* and moxidectin treated animals. Theileriosis is an important blood protozoal disease of ruminants and leads to heavy mortality. Infected animals were diagnosed and confirmed by PCR and treated with the chloroform extract of Calotropis procera leaves (3mg/kg IM) or of Peganum harmala leaves (3mg/kg IM). Buparvaquine preparation (Butalex 2.5 mg/kg IM) was used as positive control drug. Anti-theilerial efficacy of treatments was estimated by evaluating the clinical manifestation of disease and parasitological findings. Beside this treatment effect on hematological and biochemical reactions of liver and kidney functions were determined. It was found that animals treated with C. procera chloroform extract and butalex had rectal temperature in normal range by the day 7 of post-treatment. A non-significant difference ($P>0.05$) in schizonts and piroplasms in various treatments were observed at 14 and 21 day of post treatment.

Keywords: *C.procera*, chloroform extract, anthelmintic activity, antiprotozoal activity

BRM-007

TOXICOLOGICAL EFFECTS OF AFLATOXIN B1 ON GROWTH PERFORMANCE, HUMORAL IMMUNE RESPONSE AND BLOOD PROFILE OF JAPANESE QUAIL

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ABSTRACT

Toxic effects of Aflatoxin B1 on growth performance and humoral immune response against Newcastle disease Virus (NDV) vaccine were determined in Japanese quails. Quail chicks (n=300) were divided into five groups and each group was further sub-divided into two subgroups. One subgroup of each group was vaccinated with NDV vaccine to study the antibody response. Experimental diets were prepared by adding different levels of AFB1 i.e. 0.25mg/kg feed, 0.5mg/kg feed, 1 mg/kg feed and 2 mg/kg feed, and were offered to groups B, C, D and E respectively for 42 days, while group A was kept as control. Feed intake, body weight gain and feed conversion ratio were calculated on weekly basis. The Antibody titers of vaccinated quails were measured by haemagglutination inhibition test. Hematological parameters Erythrocyte sedimentation rate, Hb content, hematocrit and total leukocyte count were measured in AFB1 fed birds and were compared with the quails given basal diet. Results showed significant reduction ($P \leq 0.05$) in feed intake, weight gain and feed conversion ratio, when compared to control group. Moreover, anti-NDV antibody titre was significantly reduced ($P \leq 0.05$) in AFB1 fed groups. Hb content, hematocrit, and TLC had time and dose dependent decrease in AFB1 fed quails while ESR was increased significantly in AFB1 fed birds. This highlighted adverse effects of AFB1 on growth performance, humoral immune response and blood profile of quails.

Keywords: Toxicology, aflatoxin, immunity

AH-008

DISPOSITION KINETICS OF CIPROFLOXACIN AFTER INTRAMUSCULAR ADMINISTRATION IN LOHI SHEEP

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ABSTRACT

Disposition kinetics of ciprofloxacin studied in domestic Lohi sheep. The purpose was to optimize dosage regimen of the drug in local animals. 5 mg/Kg ciprofloxacin intramuscular (IM) preparation was injected to the thigh muscle of eight animals of similar age and weight. In every animal, a blank blood sample was taken before injecting the drug. After start of experiment, blood samples were collected from each animal at various time periods for estimating the concentration of ciprofloxacin in the blood using an advanced HPLC technique. An open two compartmental pharmakinetic model was applied to calculate different disposition parameters. In this study the absorption half life (t1/2 abs) was found to be 0.63 ± 0.16 hours while maximum concentration in plasma at any time, Cmax, was observed as 1.97 ± 0.15 µg/ml. Time taken by drug to reach maximum concentration in the plasma 'Tmax' was observed at 0.88 ± 0.09 hours. Distribution and elimination half life values were observed to be 0.46 ± 0.05 and 2.93 ± 0.45 hours, respectively. A higher volume of distribution (Vd) as 2.89 ± 0.30 L/kg was seen in this study. Total body clearance (CL) was observed as 0.75 ± 0.04 L/hr/kg and while area under the plasma concentration versus time curve (AUC) showed value of 7.19 ± 0.38 µg.hr/mL. These calculated disposition parameters were further used to optimize IM dosage of ciprofloxacin in local sheep. We concluded that in local sheep, a higher dosage (21.43 mg/kg) should be used intramuscularly and be repeated after 24 hours interval so that antimicrobial resistance may be avoided.

Keywords: Lohi sheep, Ciprofloxacin, Disposition kinetics, Optimal dosage

AP-009

EFFECTS OF DIETARY VITAMIN C ON ARSENIC INDUCED TOXICITY ON SEMEN QUALITY, REPRODUCTIVE HORMONES AND HISTOPATHOLOGY OF TESTES IN TEDDY GOAT BUCKS

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ABSTRACT

Arsenic is considered as one of the major environmental toxicant affecting male reproductive system. The present study was conducted to investigate the toxic effects of arsenic on semen quality and reproductive hormones of Teddy bucks. Vitamin C was also fed to find the ameliorative effects on these parameters. For this purpose, twelve adult Teddy bucks were randomly divided into three treatment groups: A (control), B (Arsenic 5 mg/kg BW/day orally) and C (Arsenic as in group B and vitamin C with oral dose of 200 mg/kg BW/day). These treatments were continued for 12 weeks. Semen quality parameters (volume, motility, count, sperm morphology, sperm membrane integrity, sperm DNA integrity and acrosomal inegrity) of experimental bucks of each group were evaluated on weekly basis. The libido of each buck was also observed before the semen collection. Blood was collected after every two weeks to measure the serum male hormones (testosterone, leutinizing hormone and follicle stimulating hormone). Malondialdehyde and cortisol were also evaluated after every two weeks. At the end of the study, testes of all the animals were collected and evaluated for histopathological studies. The obtained data was subjected to two-way analysis of variance, followed by Tukey test for multiple mean comparisons. The intensity of libido and semen evaluation parameters in arsenic treated buck were significantly ($p<0.05$) reduced. The level of male hormones (testosterone, leutinizing hormone and follicle stimulating hormone) were also significantly ($p<0.05$) decreased in arsenic treated animals. However, the values of malondialdehyde and cortisol were increased significantly in toxic group. The histopathological lesions in testes were present in the form of loss of germinal epithelium and atrophy of leydig cells. It was concluded that the supplementation of vitamin C ameliorated the toxic effects of arsenic on semen quality, hormones, malondialdehyde and cortisol.

Keywords: vitamin C, arsenic, toxicology, hormone

MT-010

CHARACTERISTICS OF MEAT EMULSION SYSTEMS WITH BEEF REPLACED BY SOY PRODUCTS

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ABSTRACT

Soy products can be used in the meat products to improve emulsion and textural properties, enhance nutritional value and reduce cost of production. The aim of this study was to evaluate the effect of addition of soy protein products at four concentrations on the technological properties (water holding capacity and cooking loss). Minced meats were divided into twelve treatment groups. Three soy protein products (tofu, textured soy protein (TSP), soy protein isolate (SPI)) and four concentrations (0%, 25%, 50% and 75%) of these compounds were added to meat samples, and homogenized, respectively. Samples in control treatment (0%) had no soy protein products added. It was also determined that the effect of soy protein products and their concentrations on pH and emulsion properties (emulsion capacity, emulsion stability and color parameters) of O/W emulsions prepared from beef meat. The highest water holding capacity and the lowest cooking loss were reached when 75% of soy products was added. Addition of textured soy protein increased water holding capacity and decreased cooking loss of beef meat samples. However increase in the concentration of textured soy protein and soy protein isolate decreased emulsion capacity, emulsion stability, L* and a* values of emulsions.Samples containing 75% concentration of tofu had the highest emulsion capacity. While addition of tofu increase emulsion capacity of meat emulsion systems, water holding capacity was increased by addition of textured soy protein and soy protein isolate. As a result, better results can be obtained in meat emulsions by using the mixture of soy products (tofu, TSP and SPI).

Keywords: soy products, beef meat, emulsion properties

QC-011

A REVIEW ON AFLATOXIN M1 PREVALENCE IN MILK AND RECENT UPDATES ON DECONTAMINATION STRATEGIES

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ABSTRACT:

Aflatoxin M1(AFM1) is a group 2B category carcinogen according to International Agency for Research on Cancer and is of most concern for humans because of its prevalence in milk and milk products. Dairy products are of most concern for health authorities because of the fact that these food commodities are consumed maximally by the infants and elderly, the two age groups having minimum levels of immunity. Global data indicates the prevalence of AFM1 above permissible limits especially in the developing countries suggesting the need for concerted efforts to curtail its level in dairy products. The best approach to control this toxin is to prevent dairy feed from aflatoxin producing fungus, however the curative approaches are also under research to reduce the level of AFM1 below cut off values for human health. More recently, microorganism especially lactic acid bacteria are employed for binding of AFM1 in order to reduce the bioavailability of AFM1. The use of clay materials is also reported to reduce AFM1 levels without disturbing the general characteristics of milk. Present review will provide recent data regarding the prevalence of AFM1 in milk and milk products, their health impacts, regulations adopted in different countries, methods reported to have potential to reduce the level of AFM1 in milk and the complications involved in the use of these reduction methods.

Keywords: Aflatoxin M_1, dairy feed, fungus, milk and milk products

DT-012

COLOSTRUM WHEY: A POTENTIAL INGREDIENT FOR DAIRY SECTOR IN NUTRITIONAL ASPECTS

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ABSTRACT

Whey protein is a well-know nutritional supplement in the sports arena, including body building. Colostrum whey is the liquid remaining after the removal of casein and fat. Colostrum whey is very nutritional as it is probiotic naturally. Bovine Colostrum whey in particular contains more than 200 different proteins, with α-lactalbumin, β-lactoglobulin, bovine serum albumin (BSA), and immunoglobulins as the major constituents. Bulk bovine whey has been used in the production of nutraceuticals. Colostrum whey contains compounds with a direct bactericidal effect. In addition, it also contains compounds that trigger immune defense mechanism to further help in elimination of bacteria and viruses. It will be beneficial if colostrum whey is utilized to convert into naturally nutritional by products such as ricotta cheese etc. Colostrum whey average values of fat, protein, TS, ash and chlorides are 0.333 + 0.133, 2.850+0.029, 7.257 + 0.139, 0.070 + 0.012 and 0.320 + 0.006. It contains different bioactive components which will be beneficial in a result of neutraceutical byproducts with natural probiotic nature which will help to improve our internal microflora for better digestibility and in increasing immunity. Now a days, Wastage of whey is a big problem for the environment due to high BOD value. So it would be beneficial, if colostrum whey is converted into value added product as it is a natural gift of God. Conversion of colostrum whey into cheese or energy drinks would give an innovative route to the Dairy Industry future.

Keywords: Colostrum whey, Colostrum whey benefits, Colostrum whey products

BRM-013

DIFFERENTIAL GROWTH OF SALMONELLA PULLORUM AND SALMONELLA GALLINARUM USING MODIFIED SS AGAR AND RV MEDIUM

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ABSTRACT

Salmonella belongs to family Enterobacteriaceae and most of the serovars are considered to be zoonotic and food borne pathogens. Salmonellosis is generally diagnosed through the culture techniques which take more time (4-7days). Many rapid diagnostic methods are also available in the market like latex agglutination test, enzymes linked immunosorbant assay(ELISA) and polymerase chain reaction (PCR) which are used but the problem is that they are lacking specificity. So, the present study was planned to differentiate S. pullorum and S. gallinarum by using modified Salmonella Shigella (SS) agar and Rapport Vassilidas medium. Thirty five samples were collected from the intestinal content of poultry birds and were diluted with normal saline, further enrichment was performed using RV broth. Furthermore, subculturing was done on Macconkey and SS agar. The biochemical tests were performed using Rapid ID ONE kit, this kit contains all the biochemical tests necessary for species level identification. Polymerase chain reaction was employed for strain level identification, in which the rat A gene was targeted. Out of the 35 samples 1(2.85%) postive for S. Pullorum,5.71% for S. Gallinarum. Various concentrations of dulcitol (D) were used in RV medium and SS agar. In RV medium the dulcitol concentration was 0.5g (D), 1g (D) and 0.5 g (D) + 0.5g lactose. For SS agar 0.5g (D), 1g (D) and 0.5 g (D) + 0.5 g lactose. Results show that with 1g concentration of dulcitol shows better growth in both RV and SS agar for S. gallinarum. While in 0.5 g (D) + 0.5 g lactose the growth of S. Pullorum was totally inhibited. This research provides an insight to how the routinely used growth media for Salmonella species may be modified with regards to specific ingredients, and further modifications may be made by microbiologists for improved culturing results.

Keywords: Modified medium, SS Agar, Salmonella, differential diagnosis

AH-014

COMPARATIVE RESILIENCE OF TEDDY AND BEETAL GOAT BREEDS AGAINST ARTIFICIAL INFECTION OF HAEMONCHUS CONTORTUS THROUGH IMMUNOGLOBULINS AND HISTAMINE

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ABSTRACT

Haemonchus (H.) contortus, an abomasal worm of goats (Capra hircus), affects health, production and welfare globally. Usually controlled through anthelmintics; however, development of anthelmintic resistance (AR) and concern of drug residues in food products makes use of anthelmintics questionable. Evaluation and selection of goat breeds towards Haemonchus infection is an alternate approach to control this parasite. Objective of this study was to determine the comparative resistance/resilience of Teddy and Beetal goat breeds of Pakistan of immunoglubin (Ig) isotypes and histamine concentrations in artificially infected goats with third stage larvae (L3) of H. contortus. Experimental goats (n=60) were divided into two groups i.e. Teddy and Beetal each divided into six sub-groups containing 5 goats in each sub-group. Two infection protocols were followed to infect goats i.e. early and late. Goats received dose of 12000 and 18000 L3 of H. contortus. Adult H. contortus antigen was prepared for performing enzyme linked immunosorbent assay (ELISA). Indirect ELISA was performed to evaluate the response of Igs and histamine against H.contortus. There was significant ($P<0.05$) difference observed in the levels of IgG and IgE at different time intervals post infection. Concentration of histamine was persistent in the plasma of experimentally infected goat breeds throughout the trial. However, it was significantly different at 4th and 6th weeks post infection. Up and down regulation of Igs and histamine post infection makes Teddy goats better responder than Beetal goats. Further investigations on mechanisms involved in breed resilience and/or susceptibility are required.

Keywords: Haemonchus contortus, Teddy, Beetal, Goats, Histamine, immunoglobulins, ELISA.

AH-015

HIGH PROTEIN DIET INDUCES B-CELL REGENERATION AND RESTORES NORMAL GLYCAEMIA IN ALLOXAN INDUCED DIABETIC RATS

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ABSTRACT

Diet is a key factor in promoting health, metabolic homeostasis and fulfilling energy requirements. Diabetes mellitus is a metabolic disorder and characterized by hyperglycaemia resulting from defect in insulin production or secretion, insulin action or both. Therefore, β-Cell dysfunction is a critical component in the development of diabetes. The amount, type and balance of the main dietary macronutrients (carbohydrates, proteins and fats) have a great impact on the management of diabetes. However, little is known about the molecular mechanism that how high protein diet is responsible for functional changes in pancreatic β-cells. This study was designed to investigate the effect of high protein diet (45% fish protein) on physical parameters, glycaemic control, β-cell regeneration, insulin production and release in diabetic rats. Animals were divided into three groups. First group was normal control (non-diabetic). In other two groups diabetes was induced by single dose of alloxan intraperitoneally (120mg/kg). Second group served as untreated diabetic (positive control) and received routine diet while as third diabetic group received 45% fish protein. Blood samples were taken and serum was separated for measuring serum glucose level, lipid profile and other biochemical tests. Pancreas and liver tissue samples were collected for histopathology. Biochemical results indicated that high protein diet normalized the elevated serum glucose, triglycerides and cholesterol levels and helps in normalizing the pancreatic tissue structure, morphology as well as normal replenishing or regeneration of β-cells as indicated by histopathological results. The data was analyzed statistically through one way ANOVA.

Keywords: high protein diet, alloxan induced diabetes, glycaemic control, β cell regeneration.

AH-016

ANTIMICROBIAL POTENTIAL OF BOVINE LACTOFERRIN AGAINST FOODBORNE PATHOGENS

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ABSTRACT

Food born illnesses are always a serious health issue in the Pakistan and throughout the world. Lactoferrin can be isolated from cheese whey by cation exchange chromatography without loss of its biological properties. Lactoferrin exhibits strong antimicrobial activity against different bacteria, virus, protozoa, fungi and yeast. The present study is concerned with the antibacterial activity and sensitivity of bovine lactoferrin against foodborne pathogens and to evaluate the pH range and thermal stability of bovine lactoferrin. Agar gel diffusion test was used to check antibacterial activity for each pathogen. Bacterial samples were purified and confirmed by bio-chemical tests. Three concentrations of lactoferrin 0.5mg/ml, 1mg/ml and 10mg/ml were treated on Escherichia coli, Salmonella enteritidis and Staphylococcus aureus. Antimicrobial activity of lactoferrin was determined at different range of pH. The heat stability of lactoferrin was determined at different heat treatments. The data was analyzed by complete randomized design (1-factor factorial) and comparison of means was done by Duncan's multiple range test. Outcomes received indicated that all three pathogenic bacteria were inhibited, even at 0.5mg/ml significantly. Escherichia coli is most sensitive and Staphylococcus aureus is least. Lactoferrin remain effective at 6, 7, 8 and 9 pH but no inhibition showed at 3, 4 and 5 pH significantly. There is no significant effect on antibacterial activity at pasteurization temperature i.e. 60-75°C but destroyed above 80°C. The results suggested that supplementation of lactoferrin in different food products enhances the food safety and quality.

Keywords: lactoferrin, bovine, foodborne pathogens, antimicrobial activity

MT-017

THE EFFECTS OF KEFIR IN TENDERIZING CHICKEN AND TURKEY BREAST MEAT

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Abstract
Tenderness is the most quality properties of consumer acceptability of meat.The aim of this study was to evaluate the usage of kefir on some tenderness properties, pH and color characteristics of chicken and turkey breast fillets.Meat samples were marinated in kefir for 24, 48 and 72 hours. Instrumental tenderness of cooked breast meat samples was measured using the Warner Braztler Shear method.Marinating with kefir was decreased lightness of samples. a* values of samples increased with using kefir. L* and a* values of marinated chicken and turkey breast meat were, 60.43, 65.18; 11.33, 8.96. There was no difference ($p< 0.05$) in b* values between marinated and non-marinated samples. The pH of marinated samples was decreased according to the control group.pH values of marinated chicken and turkey breast meat were 5.52 and 5.49, respectively. Firmness of turkey breast meat decreased with usage of kefir, while marinated with kefir did not change the firmness of chicken breast meat. Consequently, usage of kefir increased the tenderness of turkey meat.
Keywords: kefir, tenderness, chicken meat, turkey meat.

AH-018

COMPARATIVE EFFICACY OF SYNCHRONIZATION PROTOCOLS (PROGESTERONE BASED OR FREE) ON CONCEPTION RATE IN CAPRINE SPECIES

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Abstract

This study was designed to investigate the effect of different exogenous hormonal strategies for improving the fertility in goats. The major objective was to evaluate the comparative efficacy of progesterone-based and progesterone-free estrus synchronization protocols on conception rate in dwarf goats. North Carolina Synchronization (NCSynch) is a new strategy for synchronization of estrous. A total of 27 does were divided into 3 equal groups A, B and C. Group-A was administered with slightly modified NCSynch protocol i.e., PGF2α which was given on day 1 and 15, GnRH on day 8 & 17 of the experiment. Group-B was given medroxy-progesterone in combination with PGF2α and GnRH. Sponges impregnated with medroxy-progesterone acetate were placed intra-vaginally for period of 15 days. Prostaglandin F2α were administered upon sponge removal on day 15 of experiment and GnRH was given on day 17 to these animals. Group-C comprised of control animals receiving normal saline I/M on day 1, 7, 15 and 17. Both treatments were evaluated against control Group-C. The onset of standing estrus and duration of heat period were also recorded. Controlled natural mating was performed in all groups. Progesterone levels were also assessed during the trial by using radio immunoassay (RIA) on day 1, 7, 15 and 17 of experiment. Overall response to estrus was 55, 100 and 33% in Group-A, B and C respectively. Conception rate was 55, 88 and 33% in the respectively. Mean level of progesterone was significantly different in pregnant animals of Group-A from than that of Group-B and C during treatment days 1st, 7th & 15th.

Keywords: Caprine, estrous synchronization, methods, progesterone, NCSynch

ED-019

WATER PRODUCTIVITY UNDER GOVERNMENT AND FARMERS CONTROLLED CANAL IRRIGATION SYSTEMS

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ABSTRACT

Pakistan is becoming a water scarce country with declining per capita water availability (<1000 m3), whereas its demand for domestic, industrial and environment is rapidly increasing resulting in to stress on sustainable water supply to irrigated land contributing >90% of the agricultural production. Increase in crop water productivity is one of the most important options to achieve efficient and effective use of water resources in arid to semi-arid environment. The present study was conducted to compare the crop water productivity under public (Kabul River Canal) and civil (Joe Sheikh Canal) systems in Peshawar. Water productivity was determined at system as well as farm level for both the systems. Performance of two systems was assessed using twenty-three indicators in five major groups (productivity, water supply, sustainability, environment and institutional/management). During winter season (Rabi), wheat, sugarcane, vegetables, fodder, and orchards occupied 43, 24, 14, 6, 7% and 34, 31, 25, 6, 3% of the cropped area under public and civil canal systems, respectively. In summer season (Kharif), maize, sugarcane, vegetables, fodder, and orchards occupied 41, 24, 12, 10, 7% and 35, 31, 23, 5, 3%, land under public and civil canal systems, respectively. The cropping intensities of 187% and 194% were recorded in the two systems, respectively. Average crop water productivity (CWP) of wheat, maize, sugarcane and tomato were 0.96, 1.11, 3.31, 3.61 kg m-3 under public and 0.90, 0.77, 2.38, 2.98 kg m-3, respectively. Despite huge amount of expenditure on management as well as operation and maintenance of public system, benefit-cost ratio of civil system was 40% high. The present study concludes that the civil system with minimal management and operation and maintenance cost performed better than public system. However, to further improve the productivity as well as performance, management of both the system needs to be gradually transferred to the farmers.

Keywords: Water conservation, crops, management, farmers

BRM-020

SYNTHETIC POLYMORPHIC PEPTIDES: A STEP FORWARD FOR DIAGNOSIS OF TYPE-SPECIFIC TOXOPLASMOSIS IN HUMANS AND ANIMALS

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ABSTRACT

Toxoplasmosis, an important cosmopolitan zoonotic disease of humans and animals, is caused by an obligate intracellular parasite Toxoplasma (T.) gondii. Ingestion of uncooked or undercooked meat infected with viable tissue cysts and other foods infected with oocyst are major sources of disease transmission. Toxoplasma gondii has a clonal population structure containing three dominant clonal lineages, i.e. the clonal types I, II and III. However, some recombinant forms or exotic types also exist which develop from the combination of these clonal types. In previous studies, typing of T. gondii has been done through DNA based techniques. For this, DNA samples of T. gondii were collected either from oocysts collected from feline faecal samples or from tissues/tissue cysts collected from euthanized cats. However, getting an adequate amount of parasitic DNA from subclinical and clinical cases of toxoplasmosis remains bottleneck of DNA based typing techniques. Use of synthetic polymorphic peptides derived from T. gondii antigens is a simple, cost effective, sensitive and specific typing method. The results of previous studies showed that synthetic polymorphic peptides derived from ROP1, SAG1, GRA3, GRA6, GRA7 antigens discriminate type II from non-type II infections which suggests that serotyping is one of the promising methods for typing strains; although, limitations exist as a consequence of higher peptide polymorphism. Other peptides from different markers must be studied in order to discriminate clonal as well as non-clonal type.

Keywords: Toxoplasmosis, Serotyping, Peptides, Toxoplasma gondii

AP-021

FASCIOLOSIS: A MAJOR THREAD OF FOOD SECURITY AND ECONOMIC LOSSES ALL AROUND THE WORLD

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ABSTRACT

Of the parasitic diseases, helminth infections are the most common and the most economically significant diseases affecting grazing ruminants worldwide. Among these, fasciolosis, caused by Fasciola (F.) hepatica and F. gigantica, is one of the most significant and debilitating liver damaging diseases of ruminants. It has been estimated that about 6 7 hundred million ruminants are at risk of fasciolosis around the world. This disease can cause blood loss, reduced appetite, nitrogen retention, and impaired energy metabolism due to liver damage, reduction in weight gain and reduced milk production. Damage of organs and other biochemical changes are due to the migratory and hematophagic activities of Fasciola. The annual economic loss due to fascioliasis in the veterinary field was estimated US$2–3 billion, as a result of liver condemnation, animal weight loss, reduction of milk yield and fertility declines. In Ethiopian Highlands the estimated economic losses due to fasciolosis were US$2.75 million per year. The estimated losses due to this disease was reported US$28 million in United Kingdom, in Bangladesh approximately US$3 million in and in Pakistan US$0.35 per year in terms of animal weight loss, declined fertility rate, and reduced milk yield. It is very difficult to control the disease and eradication is impossible as the parasite can survive in the host, snail, and environment for long periods. In addition to good farm management, it is imperative to exercise strategic anthelmintic therapy in order to maintain parasitic diseases at an acceptable level.

Keywords: Fasciolosis, Economic significance, Food security, Ruminants

AP-022

EFFECT OF BREED ON CARCASS TRAITS OF KUNDHI AND NILI RAVI BUFFALO

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ABSTRACT

Present study was conducted to study the carcass traits of Kundhi and Nili Ravi buffalo. The total 100 animals of Kundhi and Nili Ravi breed were randomly selected and divided into A, B, C and D group. In group A and C there were Kundhi and Nili Ravi male whereas, B and D females of both breeds respectively and the age of animals was around 36 months. The selected animals were slaughtered at slaughter house of Seven Star meat processing company Dhabeji, Thatta. The carcass traits studied including live body weight, carcass weight, dressing percentage and boneless weight. The results revealed that carcass traits live body weight, carcass weight, dressing percentage and boneless weight of Nili Ravi male was significantly higher ($P>0.05$) as compared to the Kundhi buffalo male, while same carcass traits were also observed highly significant ($P>0.01$) in Nili Ravi female than Kundhi buffalo female. It was concluded that carcass traits of Nili Ravi buffalo are better expressed and produces more beef than Kundhi buffalo. Likewise Kundhi buffalo male is better in beef production than the Nili Ravi female and Kundhi buffalo female produces low carcass yield.

Keywords: Carcass traits, Breed, Kundhi, Nili Ravi buffalo.

ED-023

DAIRY SCIENCE PARK–EMPLOYMENT OPPORTUNITIES FOR THE YOUTH

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ABSTRACT

The Dairy Science Park (DSP) has emerged at the University of Agriculture, Peshawar, Pakistan, as a platform engaging the youth in productive economic activities. The present farming system comprise livestock and poultry production unit lacking appropriate technical and marketing support hence lacking quality control and traceability. Under DSP, medium-sized units are being networked with services providers, markets, and emerging entrepreneurs. The United Nations has accepted DSP as #SDGAction9671. The objective of DSP is to utilize the livestock assets for socio-economic welfare of the people of KP, to motivate the youth of KP for utilizing indigenous resources for self employment and to protect the people of KP and the adjoining regions from public health threats through biorisk management. DSP has made a feasibility model for modern hygienic slaughterhouse in Peshawar which needs to be supported by our government.

DSP suggests establishment of a network of investors, farmers, input suppliers, service providers, processors and marketing partners with mutual interactions backed up by quality control certifications. The stack holders would work through standard operating procedures developed by the Expert panels in trace of all the stake holders with protected through legislations and regulations covered under the DSP Act. The livestock farmers

Keywords: Entrepreneurship, SDGs, youth, livestock, value addition, quality control, biorisk management, export

DT-024

EFFECT OF RIPENING CONDITIONS ON PHYSICO-CHEMICAL PROPERTIES AND SURVIVAL OF PROBIOTIC MICROORGANISMS IN PROBIOTIC CHEDDAR CHEESE

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ABSTRACT

Consumption of high concentration of probiotic bacteria at 10^7 viable cells per gram or per milli-litre of product is required to confer health benefits. Most publications concerning incorporation of probiotic bacteria into cheeses have focused only on their survival during manufacture and storage and only a few studies have considered the effect of probiotic adjuncts and the ripening temperatures on cheeses. Effect of ripening temperatures (4 and 8°C) on survival of probiotics microorganisms after ripening for 24 weeks.*Bifidobacteriumanimalis* subsp. *Lactis*, *Lactobacillus casei*, *Lactobacillus acidophilus* were used as an adjunct in the production of Cheddar cheeses which were ripened for 24 weeks at 4 and 8°C. The counts of starter lactococci in cheeses produced with *B. animalis*, *Lb. casei* or *Lb. acidophilus* ripened at 8 °C were significantly lower than those ripened at 4 °C at 24 weeks. Probiotic microorganisms remained viable (7.50 $\log_{10}$ CFU/g) at the end of 24 weeks and their viability was not affected by the ripening temperatures. The acetic acid concentration in cheeses made with *Bifidobacterium* sp. or *Lb. casei* sp. was significantly higher than that of the control cheese. Increasing the ripening temperature from 4 °C to 8 °C did not affect the viability of the probiotic microorganisms, the salt, fat and protein contents of the cheeses during ripening of 24 weeks. This study shows that careful selection of probiotic microorganisms is required to have Cheddar cheese with high nutritional value for health benefits.

Keywords: Probiotics, Cheddar cheese, Ripening, Temperature, Nutritional Value.

AH-025

PHYSICO-CHEMICAL AND NUTRITIONAL PROPERTIES OF CHEDDAR CHEESE MADE FROM CITRUS RETICULATA BLANCO CRUDE FLOWERS EXTRACT (CFE)

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Abstract

Citrus reticulata Blanco crude flowers extract (CFE) at different level (1, 2, 3 and 4%) were used as natural milk coagulant instead of rennet to develop the Cheddar cheese. The Cheddar cheeses were compared with one controlled cheese made with rennet of 0.002%. Physico-chemical results of Cheddar cheese showed that cheese made with 1% and 2% of CFE had a longer and slightly softer texture. While, cheeses containing 3 and 4% CFE had semi-hard textural properties of curd similar to rennet added cheese. The CFE made cheese had moisture 37 %, fat 45 % on dry basis resembling to rennet made Cheddar cheese. Protein analysis shows that CFE made cheese had significant higher protein content than control one. The Cheddar cheese with 3% and 1% CFE were preferred by consumers instead of 2% and 4% for their better taste, texture/appearance and overall acceptability. Conclusively, it fulfills the nutritional requirement with acceptable organoleptic characteristics and at the same time provides health benefits.

Keywords: Cheddar cheese, Citrus reticulata Blanco, Buffalo milk, milk coagulant

DT-026

ENHANCEMENT OF OXIDATIVE STABILITY OF IRON ENRICHED BUTTER OIL WITH NATURAL ANTIOXIDANTS

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ABSTRACT

Oxidative stability of iron fortified butter oil was measured by using different concentrations of anti-oxidants (sesame oil and turmeric powder) in butter oil. The butter oil was prepared by augmented of natural anti-oxidants. i.e. T_0 (100% butter oil+ 30 mg iron sulfate), T_1 (butter oil + sesame oil 5% and turmeric powder 0.10%), T_2 (butter oil + sesame oil 10% and turmeric powder 0.15%), T_3 (butter oil + sesame oil 15% and turmeric powder 0.20%). Samples were stored for 90 days at 40 ^{0}C. Butter oil samples were analyzed for free fatty acids, peroxide value, thiobarbituric acid value, shaal oven test and sensorial attributes (color, smell, appearance and overall acceptability) at 30 days of intervals. Treatment T_3 had lowest peroxide and free fatty acid values, while highest values were observed in T_0 and T_1. Smell, appearance and overall acceptability of iron fortified butter oil shows increased as amount of augmentation of natural anti-oxidants increased in all treatments. The lowest sensory score was observed in treatment T_3 due to dark yellowish type color of turmeric powder. Over all treatments T_2 and T_3 received higher scores from all the physicochemical tests and sensorial evaluation.

Keywords: Butter oil, Sesame oil, Turmeric powder, Natural Anti-oxidant.

ED-027

STRENGTHENING COMMUNITY RADIO FOR EFFECTIVE CLIMATE CHANGE ADAPTATION STRATEGIES FOR CLIMATE SMART AGRICULTURAL PRODUCTION IN AFRICA

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ABSTRACT:

Strengthening community radio (CR) is crucial for climate change adaptation and mitigation policy awareness of the risk and opportunities for improved potato production in Africa. CR can disseminate climate change adaptation and mitigation information on the new opportunities for agriculture. The principal objectives are to: explain the role of community radio in promoting potato in the food and nutrition policy; state food and nutrition systems policy issues; discuss gender equality and women empowerment for sustainable agriculture and food policies; and explain effectiveness of CR in achieving sustainable development goals two and thirteen (SDGs 2, 13). This policy review employed Ugandan community radio (CR), climate change, food and nutrition policies and best practice for agriculture and food systems information diffusion to achieve SDGs 2, 13. In the searches, we looked for data on enhancing the role of community radio for climate change adaptation and mitigation policy awareness of the risk and opportunities for improved potato production in Africa. The data were then examined for evidence. The retrieved data were summarized for this paper. Community radio is vital for early adoption and diffusion of agricultural technology information for achievement of the SDGs with a focus on SDG 2, and SDG 13. CR radio provides the best coordination for community media stakeholders for agriculture, food, and nutrition research, education, technology, innovations, and policy communication. Community radio services are vital but local radio stations are weak; lack capacity or content, good investments, equipment, well trained staff, and suffer political abuses. Community radio capacity can be well developed to promote climate change smart agricultural opportunities for sustainable livelihoods with a focus on technology innovations diffusion. Africa needs enhanced research funding, policy, capacity building, networking, innovations, South – South and North – South partnerships urgently.

Keywords: Africa, climate change, climate smart agriculture, radio, technology, diffusion, SDGs

ED-028

PUBLIC AWARENESS COMMUNICATION CAMPAIGNS FOR DIFFUSION OF FOOD AND NUTRITION SECURITY POLICY INFORMATION SERVICES FOR SUSTAINABLE LIVELIHOODS IN UGANDA

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ABSTRACT:

Public awareness communication campaigns can end basic hunger, achieve food security and improved nutrition for sustainable agriculture in Uganda. The key objectives are to: describe public communication campaign strategies for sustainable development goal two (SDG 2); discuss the areas of focus in achieving food and nutrition security; highlight the major challenges and prospects of good governance in policy innovations information diffusion and discuss the social responsibility of the press in promoting good governance for food and nutrition policy. In this review, published evidence on the current status of agriculture, food security, and nutrition policy and research innovations diffusion in Uganda was obtained. Information was accessed using internet search engines and libraries. The data that were obtained during the process were used to broaden the search for primary information sources. The findings were contextualized according to the national agricultural, food, and nutrition policy. The retrieved data were summed up for this paper. Public communication campaigns are vital for promoting food and agriculture policy and programme information dissemination for better nutrition in Africa. Effective communication campaigns promote rapid adoption and diffusion of agriculture, health, food, and nutrition technology policy innovations in society. The campaign should be participatory, sustainable, theory driven, gender sensitive, and regularly evaluated for better performance. There are some good north-south, south-south, and inter-university research partnerships which should be consolidated and sustained. Most policy research messages do not reach the target public. The media is the most efficient and effective means of speeding up agriculture, food, and nutrition policy information diffusion. There is urgent need for enhanced north-south collaborative policy research, training, capacity building, technology transfer, innovations funding, ethical standards, good governance, community media development, networking, and gender equality in Uganda.

Keywords: Uganda, SDGS, media, food security, agriculture, policy, north-south collaborations

ED-029

AN INVESTIGATION ON CHEMICAL COMPOSITION AND NUTRITIONAL EVALUATIONS OF SOME NATURALLY PRODUCE FISHERIES RESOURCES OF PAKISTAN

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ABSTRACT:

Hunger and malnutrition are now the most demoralizing issues and are inextricably interconnected with poverty in under developing countries. Today, about one in eight people were found to be suffering from chronic hunger. But nowadays, it has been widely approved around the world that fisheries resources have great capacity to address these challenges and could contribute categorically towards the suppression of hunger, food insecurity and malnutrition. Therefore, the role fish food in providing both adequate food resources and nutrition security for all has now been recognized at universal level. A study was conducted to determine the chemical composition found in the scales, shells and muscle tissues obtained from some commercially important fishes and shellfishes of Pakistan coast inorder to observe their nutritional importance for human. Samples were examined for detecting the contents of crude protein, crude lipids, amino acids and certain minerals. Amongst all other animal resources, all these fisheries resources were found to be enriched in protein, certain types of useful amino acids and minerals. Thence, it had been concluded that all these fisheries resources can also be used as useful food resources and bio-products in the productions of useful materials in pharmaceuticals and cosmetic industries.

Keywords: Fishes, shellfishes, bio-products, economic values

AH-030

EPIDEMIOLOGY AND CONTROL OF GASTROINTESTINAL FAUNA OF EUROPEAN ALBINO RABBITS OF FAISALABAD DISTRICT, PUNJAB, PAKISTAN

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ABSTRACT

Gastrointestinal (GI) Parasitism is one of the main constraints limiting the production of livestock population including rabbits. Different antihelmintics have been used by veterinary practitioners and farmers; however, unable to get rid of GIT parasitism due to multiple factors. This study was aimed to determine the frequency distribution and control of GI parasites of rabbit population of Faisalabad district. To this end, a questionnaire was developed to record the epidemiological parameters which associated with the disease distribution in rabbits. Fresh faecal sample were collected for lab analysis for screening the helminth positive subjects. Positive rabbits for worms were subjected to oral formulations of levamisole (LEV), albendazol (AB), ivermectin (IVM) and Pyrental pamoate (PP). Total 384 rabbits were screened from five study sites of the selected district. Overall prevalence of Gastrointestinal Parasitism in rabbit Populations of study district was found 84.37 %. Eggs of Trichostrongulus retortaeformis, Graphidium strongsum and Cittotenia ptenoids were seen in feacal egg count assay 88.74%, 8.74% and 2.54% respectively. In in vivo drug trials the efficacy of IVM was good as compared to all other drugs. Efficacy of LEV was satisfactory but as compared to other drugs not remarkable. Effect of PP and AB were almost same. So, IVM is recommended for GI parasitism. The study provided the better choice of drug for preventive and/or therapeutic management of GI parasitism in rabbit population of Faisalabad, Punjab, Pakistan.

Keywords: GI Parasitism, Albino Rabbit, Epidemiology, in vivo, ivermectin

BRM-031

COMPARATIVE EVALUATION OF MICROBIOLOGICAL MILK SAFETY STANDARDS EXISTING IN FAISALABAD

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ABSTRACT

Milk is highly perishable and easily spoiled by microbial contamination. Pathogenic bacterial contaminants in milk may causes different diseases like dysentery, tuberculosis, salmonellosis and fever. Microbiological quality milk safety standards were evaluated. Milk samples (Raw, Pasteurized and UHT) were collected from farms and commercial market around Faisalabad district and analyzed by different methods like, methylene blue reduction test (MBRT), swab test on animal food (STAF) to check for the antibiotic residues in raw milk, somatic cell count (SCC), total coliform count (TCC), thermoduric count, detection of M. tuberculosis and pathogenic E. coli.
In raw milk samples only 2% were positive for STAF while 5% for pathogenic E. coli were confirmed through Eosin Methylene Blue (EMB) agar on which they give metallic green sheen. The mean SCC, TCC and thermoduric count for raw milk was 1.5× 105, 298 and 900, respectively. TCC for pasteurized was 150 and it was zero for UHT. The thermoduric count for pasteurized and UHT was 1100 and 1480, respectively. All the three categories were negative for detection of M. tuberculosis. Overall results indicated that about 10% of raw and pasteurized milk samples were positive for different type of microbial contaminations as E.coli and coliforms and do not meet the milk safety standards.
Keywords: UHT, pasteurized, STAF, TCC, contaminations, thermoduric

AH-032

HIGH OMEGA-6/OMEGA-3 RATIO IN MARGARINE INDUCES INTESTINAL INFLAMMATION AND OXIDATIVE STRESS RESPONSE IN WISTER RAT

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ABSTRACT

Diets have a great impact on health and health-related issues. High-fat diets have been linked to epidemic development of metabolic disorder. Manifestation of metabolic disorder is causally associated with chronic diseases such as insulin resistance, inflammatory bowel disease (Ulcerative colitis and Crohn's disease), intestinal junction disruption and ultimately cancer. Underlying mechanisms are association with oxidative stress. This study was designed to investigate the development of metabolic disorder after a high-fat diet especially with high omega-6/omega-3 ratio in margarine on various physiological aspects, gut pathophysiology, epithelial signature and oxidative stress in a rat model. Results indicated a complex interplay of high ratio of omega-6/omega-3 in high-fat diet-induced oxidative stress on gut epithelium alterations, lipid metabolism, and plasma insulin level. Overall results suggest that high-fat diet as pervasive factors that exacerbate its lethal effect on gut physiology and metabolism. The data were statistically analyzed by one-way ANOVA and DMR.

Keywords: Metabolic disorders, gut pathophysiology, metabolic stress, lipid metabolism

ED-033

EFFECT OF GAMMA-IRRADIATION ON QUALITY CHARACTERISTICS OF BROWN RICE BASED WEANING FOOD

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ABSTRACT

Weaning foods were formulated using varying amounts of raw materials by considering nutrient and caloric values of each ingredient in order to meet the nutrient requirement of infants. The brown rice, mungbean, apple pulp and walnut flour were blended separately in different ratios with each other along with 3 g of skim milk powder. The blended mixture of weaning food was packed in aluminium laminates to monitor the changes in physico-chemical, functional, microbial and organoleptic parameters and stored for a period of 6 months at ambient temperature (32 ± 20C). On the basis of physico-chemical and sensory evaluation, the best weaning food, T5 was treated with different levels of irradiation doses. The irradiated samples were stored under ambient conditions (32 ± 2 0C) for a period of 12 months. Results of present study led to the conclusion that irradiation treatment did not affect the proximate composition of weaning food and proved best in maintaining the quality and increased the shelf life up to 12 months of storage.

Keywords: Weaning food, brown rice, irradiation

BRM-034

PREVALENCE OF ESCHERICHIA COLI O157: H7 IN BEEF MEAT IN WESTERN ALGERIA

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ABSTRACT:

Actually, there are no official regulations stipulating the procedures for sampling and research of Shiga-toxin producing (STEC) in food in Algeria.
In this study, we were interested in search of E. coli O157: H7 STEC in 750 samples of beef meat imported from different countries. After enrichment and use of selective agents in the Sorbitol MacConkey (SMAC) medium that are intended to curb the growth of the annex flora, we have isolated 5 strains from meat.
These strains presented the main characteristics of E. coli O157: H7, non sorbitol fermenting and negative β-Dglucuronidase, we have colorless colonies (the other species of E.coli fermenting sorbitol form pink colonies on SMAC medium).
Genetic characterization revealed the presence of genes and toxicity stx1 stx2, are the major virulence factors of these strains, they are responsible for pa¬thogenicity of these bacteria by the production of toxins as well as the specific hemolysin (ehxA) and intimin (eae genes) for E. coli O157: H7.
The study of the resistance of the strains to antibiotics disclosed they are sensitive to all antibiotics (ampicillin, chloramphenicol, gentamycin, colistin, flumequin, enrofloxacin, nitrofurantoin, cephalotin, sulfamethoxazole-trimethoprim and tetracycline) tested.
Keywords: E. coli O157: H7, beef meat, stx1, stx2, antibiotics.

BRM-035

RISK CHARACTERIZATION OF ANTIBIOTIC RESISTANCE OF SALMONELLA ISOLATED FROM RAW MEAT IN PENANG, MALAYSIA

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ABSTRACT:

This research work has been endeavoured to estimate the qualitative risk characterization of antibiotic resistance and genetic determinants of resistance of Salmonella isolated from raw meat samples. A total of 400 samples including beef, chicken, mutton and fish meat from different wet markets (240) and hypermarkets (160) in Penang, Malaysia, were collected. Detection of Salmonella was carried out by following ISO (6579: 2002), susceptibility against 15 antibiotics of clinical importance and 13 different resistance genes in Salmonella were investigated in this study. Further, risks of antibiotic resistance to consumers were investigated using risk analysis approaches. As a result, Salmonella expressed maximum resistance to two antibiotics; tetracycline and sulfamthoxazole from beef, chicken, mutton and fish in wet markets and to sulfamethoxazole from beef, chicken and fish meat in hypermarkets. Highest prevalence of resistant genes in Salmonella was found for streptomycin (strpA, strpB= 80%) and tetracyclin (tetA=80%) in wet markets and streptomycin (strpA, strpB= 80%), amoxicillin (bla-TEM: 80%) and sulfamethoxazole (Sull2: 100%) in hypermarkets. Moreover, risk characterization model signified four cases of Very High Additional Risk (VHAR) of resistance; three cases of streptomycin from beef, chicken, fish and one case of ampicillin from fish. In conclusion, increasing antibiotic resistance, due to the potential prevalence of antibiotic resistant genes in Salmonella and ultimately the originated risk of resistance against WHO enlisted life saving antibiotics highlights the emergence of antimicrobial resistance in food chain.

Keywords: Raw meat, Salmonella, Antibiotic resistance

AP-036

COMPARATIVE EVALUATION OF NIGELLA SATIVA AND LINCOMYCIN AS GROWTH PROMOTERS IN COMMERCIAL BROILER

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ABSTRACT

Nigella sativa (*N. sativa*) is an important herb with multiple pharmacological activities. Therapeutic properties of *N. sativa* are based on the availability of thymoquinone (TQ). Current study investigates the antibacterial effect of *N. sativa* in comparison to lincomycin as growth promoter in broiler. Effect of *N. sativa* powder on feed conversion ratio (FCR) was also observed in broiler chicks. On weekly basis body weight of birds was observed. Immune titer against Newcastle and Infectious Bursal disease was also determined. Statistically analysis of variance and significance ($P<0.05$) of the results was determined through Duncan's Multiple Range test.Result demonstrated that supplementing the broiler feed with 1% *N. sativa* improved body weight gain and feed conversion ratio of broilers at finisher phase ($P<0.05$). In conclusion, results have shown that addition of 1% *N. sativa* powder appear to have a positive impact on growth performance of broiler chicks and it could be considered as a substitute of antibiotic growth promoter (lincomycin) for broiler chicks.

Keywords: *Nigella sativa*, lincomycin, Immune titer, FCR, growth promoter, histopathological

DT-037

ESTIMATION OF MILK PROTEASE ACTIVITY FROM UNINFECTED MAMMARY GLANDS OF NILI-RAVI BUFFALOS , SAHIWAL AND CROSS-BREED COWS OF PAKISTAN.

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ABSTRACT:

Pakistan is at 4th place among largest milk producing countries of the world and it produces 49.5 million tons of milk annually. Dairy industry of Pakistan consists of buffaloes and cows. The share in annual milk production of country by cow is 17.37 million tons and by buffalo is 30.46 million tons. Protease activity was determined by the casein digestion assay described by Drapeau(1974). The level of protease activity in milk was tested and compared in milk samples from Nili-Ravi buffaloes, Sahiwal and cross-bred cows. The milk protease activity differed significantly ($p<0.05$) among tested dairy species/cattle. The mean value for protease activity in milk was highest for cross-bred cows followed by Sahiwal cows and lowest for Nili-Ravi buffaloes. With a minimum value of 32units/mL and a maximum value of 95 units/mL, the mean value of milk protease activity for Nili-Ravi buffaloes was 57.3±2.16 units/mL. For Sahiwal cows, the minimum value of milk protease activity was 33units/mL while maximum value was 99 units/mL with a mean value of 69.6±3.02units/mL. For cross-bred cows, minimum value of milk protease activity was 39 units/mL and maximum value was 127units/mL with a mean value of 81.3±3.35units/mL. As for as protease activity was concerned, the milk of Nili-Ravi buffaloes was comparatively better as compared to other two dairy animal types investigated. Moreover, values being reported can be used as reference values of protease activity in milk for Nili-Ravi buffaloes, Sahiwal and cross-bred cows.

Keywords: Dairy industry, protease, Nili Ravi buffaloes, Sahiwal, cross bred

ED-038

APPLICATIONS OF PULSE ELECTRIC FIELD IN DAIRY TECHNOLOGY

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ABSRACT:

Thermal processes used for the preservation alter the nutritional and sensory attributes of food materials. The food industry is aiming for new preservation techniques to replace the thermal processes with non- thermal processes, where there is no generation of heat thus have minimal effects on nutritional and sensory attributes of food. The thermal process pasteurization which is used to extend the shelf life of milk and inactivates the pathogenic bacteria, affect the nutritional and organoleptic properties of milk. The main effect on milk is the development of cooked flavor. In order to overcome such causes pulse electric field is used. Pulse electric field is considered as one of the most promising non-thermal processing technology. The pulse electric field (PEF) is alternative method to thermal pasteurization for milk that have minimal effects on sensory and nutritional attributes of milk thus providing fresh like products. Most PEF systems used for treatment of dairy or dairy products have been limited to bench top or small pilot scale systems. The PEF technology used in milk inactivates the microorganisms and enzymes and it has been reported that PEF have minimum adverse effects on sensory attributes of milk. It has been found that PEF treatment (35 kV/cm; 2.3 μs of pulse width at 650C for < 10s) immediately given to milk after pasteurization extended the shelf life of milk to 78 days at 40C. PEF technology is considered as a promising technology in dairy industry. Its major application is on inactivation of vegetative microorganisms. It has least effects on color, taste and nutritive value of dairy and dairy products. It is effective in extending the shelf life of milk.
Keywords: Diary, Dairy products, PEF, Pasteurization.

AP-039

EFFECT OF *MENTHA PIPERITA*(PEPPERMINT) EXTRACT AND ITS JUICE ON EGG QUALITY TRAITS DURING DIFFERENT STORAGE TIME IN LAYING HENS

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ABSTRACT:

The present study was designed to evaluate the effect of *Mentha Piperita* oil and mentha juice in feed and drinking water respectively, on egg quality traits in laying hens at different storage intervals. A total of 252 Babcock laying hens were divided into 7 groups and each group was further divided into 4 subgroups having 9 hens in each. Group A served as a control. Group A was fed basal diet without any supplementation. Group B, C and D were offered diets supplemented with mentha extract 50, 100 and 200 mg/kg of feed while groups E, F and G diets were having same doses of mentha juice in drinking water. At the end of the study (56 days), 36 eggs from each group were collected randomly. Thus a total of 252 eggs were collected randomly. 84 eggs were analyzed on the 0day of storage while remaining 168 eggs were stored at +4°C. Half (84) of the stored eggs were analyzed for egg quality parameters like egg breaking strength (ORKA Egg Force Reader, EF 0468-2011), haugh unit, egg yolk color and egg weight (SANOVO Engineering Egg Analyzer, EA0333, Denmark) after 15 days of storage and remaining half of the eggs after 30 days of storage. In the result egg shell breaking strength remained non-significantly different ($P>0.05$) in all groups except group A which showed significantly reduced ($P<0.05$) value at day 15th of storage in among the group analysis with respect to time. Similarly, the yolk color of eggs also showed no difference ($P>0.05$) in all groups. Haugh unit results also showed non-significant difference ($P>0.05$) between all the groups as compared with control group. The results of egg weight also showed no change ($P>0.05$) in all groups as compared with the control group intervals.

Keywords: Mentha Piperita, Babcock laying hens, egg quality parameters, mentha juice

AP-040

THERMAL AND NUTRITIONAL STRESS IN EWES AND DOES: EFFECTS ON EMBRYO DEVELOPMENT AND EMBRYONIC LOSSES

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ABSTRACT:

Exposure to elevated ambient temperature during period prior to conception and the early stages of pregnancy has strong adverse effects on reproductive outcomes such as reducing the quantity and quality of ovine and goat embryos. An inappropriate feeding (overfeeding or underfeeding) of reproductive does and ewes affects blood progesterone concentrations and metabolic hormones such as Insulin-like Growth Factor I (IGF-I) altering oocyte and embryo quality. On the other hand, the deficiency of some vitamins and minerals especially vitamin E and selenium can cause accumulation of lipid peroxidation products which can lead to preeclampsia or pregnancy-induced hypertension. However, the housing practices and well feeding by supplying balanced dietary energy and polyunsaturated fatty acids (PUFAs) pre-and during mating may improve embryo survival. Studies suggest that hormonal treatment with gonadotropin-releasing hormone (GnRH) fluorogestone acetate (FGA), arginine may reduce embryo mortality. This article aims to describe factors affecting embryo losses and explore some of the recent developments in prevention early embryo losses in small ruminants .

Keywords: thermal and nutritional stress, embryo development, ambient temperature, blood progesterone, Insulin-like Growth Factor I, polyunsaturated fatty acids, fluorogestone acetate, embryo losses

AH-041

COMPARISON OF LINCOMYCIN AND TETRACYCLINE AS ANTIBIOTIC GROWTH PROMOTER IN COMMERCIAL BROILER

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ABSTRACT

Antibacterial agents are the most valuable means available against bacterial infections such as, lincomycin and tetracycline are common brand. It is a cost-effective drug because low cost, good activity against anaerobic bacteria, favourable pharmacokinetic and pharmacodynamics. Still the criterion standard for therapy of anaerobic infections was especially in gut infection. Use of sub therapeutic level of antibiotic in animal feed as growth promoters are primarily source of antibiotic resistance and stress factor for gut epithelium. Current study was designed to elaborate the advances in understanding comparison in between lincomycin and tetracycline as AGPsin commercial broiler. Physical parameters, immune titer (Newcastle and Infectious Bursal disease), histopathological examination of gut and hematological parameters was studied. At the same time, feed intake (g) and feed conversion ratio was measured accordingly for hematological and histopathological analysis. Results of this study show that addition of tetracycline increases immune titer against ND and IBD diseases as compared to control and lincomycin treated groups. Results showed that lincomycin has significantly perform better as compared to tetracycline while as, tetracycline showed resistance against bacterial population. Statistically data was analyzing through analysis of variance and significance of the result was determined through Duncan's Multiple Range test.

Keywords: IBD, ND, Feed conversion ratio (FCR), AGPs, Tetracycline

PH-042

PHYTOREMEDIATION: AN INSPIRING AND ECONOMICAL FOR THE TREATMENT OF IRRIGATION WATER

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ABSTRACT

Waste water irrigation is a common practice in developing countries. This practice poses a high risk to food security and human health due to contaminants of emerging concern (CECs) contained in the wastewater. These CECs originate from industrial effluents and domestic discharges which contain persistent organic pollutants (POPs), residues of pesticides, insecticides, dyes and pharmaceutical drugs etc. These toxicants are taken up by the crops making way to enter the food chain, bio-accumulate at all trophic levels and present a terrific risk to food security. In this scenario, remediation of wastewater is becoming a big challenge worldwide. Conventional methods are very costly and environment unfriendly due to noxious by-products. Therefore, phytoremediation, an innovative field of environmental bio-technology, is becoming an ultimate alternate of the conventional methods. Phytoremediation exploits the natural detoxification potential of plants alongwith their associated microbes to remediate polluted water.

This study presents a remarkable potential of two aquatic plants, Nasturtium officinale (watercress) and Lemna minor (duckweed) to remediate domestic wastewater of Shehzad town, Islamabad, Pakistan. The study of physico-chemical parameters of wastewater showed very high levels of chemical and biological oxygen demand (COD, BOD), total dissolved solids (TDS), total hardness, pH and turbidity. Interestingly, following the treatment with the designated plant system, a significant decline was observed in all the studied parameters which were comparable to irrigation water standards. Hence, the two plants presented the marvellous capability to extract and degrade the pollutants from wastewater which was obvious from the colour and odour of water. Henceforth, the proposed technology would serve as a great asset in the already existing repertoire of efforts to produce pollutants free food. Moreover, good irrigation practices will provide an excellent step towards food security by eradicating the poisons from food crops

Keywords: Wastwater, irrigation, human health, contamination

FSE-043

PRODUCTION AND IMMOBILIZATION OF ENDOGLUCANASES FROM MUTANT DERIVATIVE OF SUPER KOJI (*ASPERGILLUS ORYZAE*) ON NANO-POROUS SUPPORT

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ABSTRACT

Endoglucanases have diverse industrial applications such as: textile, detergents, pharmaceuticals, paper &pulp, food and beverages, biofuels, livestock feed, etc. Immobilization offers a potential solution for enzymethermostabilization, recycling and easy recovery.In the current study, endo-glucanase was produced from hyper producermutant M-60 (5) of *Aspergillus oryzae* under submerged conditions and immobilized through entrapment on polymeric supports in triplicate. Alginate (5-15%) dissolved in endoglucanase was blended with gelatin (2-6%), allowed to polymerize in $CaCl_2$ and recyclability was determined. The study was completed in about 8 months. The molecular mass of endo-glucanase produced by *A.oryzae* mutant was low i.e. 24 KDa. The recyclability of immobilized endoglucanases on various blends of alginate (5%) with gelatinconcentrations ranging from 2□6% (w/v) was poor. Afterwards, the enzyme was immobilized solely on alginate beads using 5□15% (w/v), and the recyclability was improved comparatively in case of 15% alginate beads and at fourth cycle about 60% of enzyme activity was retained.The optimal temperature and pH of immobilized enzyme was 50 °C and pH 3.6, respectively. The 15% alginate beadsmorphology was determined through Field emission scanning electron microscope (FESM).It was concluded that immobilized endo-glucanase was more stable than free enzyme (187 folds), improving half-life (t½) from 29 minutes to 55 minutes at 60 °C, and showed enzyme activity at broader pH range comparatively (3.2-10.4). The immobilized endo-glucanaseswill be economical for wide range of industrial applications; therefore, to improve the recyclability our future plans are to immobilize the enzyme through cross linking on surface of various food grade supports. In industries, the animal feed can be digested artificially for extended period of time by treating with immobilized endo-glucanase, can improve animals health and milk production. Immobilized endoglucanases can also be applicable in juice industries.

Keywords: Endoglucanases, *Aspergillus oryzae*, industrial applications, lginate, free enzyme, food grade supports

ED-044

EFFECT OF ANTIOXIDANT, PACKAGING MATERIAL AND STORAGE PERIODS ON THE CHEMICAL COMPOSITION OF ALMOND KERNEL

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ABSTRACT

The almonds of uniform size were manually decorticated and extracted kernals were mechanically dried at 40^0C to final moisture content of 4.20% after antioxidant treatment (BHA+BHT @ 0.015%) were given to each. The treated samples were packed in LDPE and laminates (vaccum) to moniter the changes in quality attributes under ambient and accelerated (35^0C) storage conditions for a period of 270 days. Antioxidant treated samples packed in vaccum laminates and stored under ambient conditions proved significantly superior by exhibiting highest crude fat content (54.33%) crude protein content (15.16%) crude fiber content (9.81) minimum peroxide value (109.99 meq/100g) and free fatty acid value (0.95mg/g). compared to the untreated kernals packed in LDPE under accelerated conditions throughout the storage periods. Results of present study have led to the conclusion that antioxidant treatment vaccum packaging and ambient conditions proved best in maintaining the quality of almond during storage.

Keywords: Almonds antioxidants and packaging material

PH-045

AN ANALYSIS OF CORRELATION BETWEEN POOR FOOD EDUCATION AND DENTAL CARIES IN PESHAWAR

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ABSTRACT

Poor food education leads to intake of refined carbohydrates such as candies, cookies, cakes, soft drinks, soda, honey, processed foods such as the fries, pasta, biscuits, pre-sweetened cereals and low quality food that in turn causes a high risk factor in development of caries. Data on quantification of poor food education and carries is deficient in medical and dental literature in context to Pakistan. Hence an analytical cross sectional study to determine the prevalence of caries among adolescents of age16-18 years was done in Peshawar. Total sample size was 100 adolescents. Data was collected through a self-administered questionnaire. The study was carried out to determine the causes of prevalence dental caries among adolescents in Peshawar, to assess the knowledge of oral health among adolescents in Peshawar and to quantify the data on food education and dental caries among adolescents in Peshawar. The collected data suggests that poor Food Education is positively correlated with Dental Caries.

Keywords: Food Education, Dental Caries, Carbohydrate Rich Food, Peshawar

AH-046

MONOGLYCERIDES AN ALTERNATIVE TO ANTIBIOTIC GROWTH PROMOTERS IN COMMERCIAL BROILER

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ABSTRACT

A wide use of antibiotic growth promoters (AGPs) is beneficial and helpful for increasing efficiency which in turn makes animals healthy and more productive. The AGPs have also their role in reducing harmful bacteria from gut and reducing the competition for host nutrients as well as reduced the subclinical disease caused by these bacteria to obtain better performance. Current study investigates the antibacterial effect of Monoglyceride (Monolaurin) in comparison to lincomycine as growth promoter in broiler chicks. Effect of Monoglycerides on feed conversion ratio, physical parameters, immune titer (Newcastle and Infectious Bursal disease), histopathological examination of gut, screening antibacterial activity were performed. Result showed that supplementing the broiler feed with Monoglyceride (monoluarin) improved body weight gain and feed conversion ratio (FCR) of broilers at finisher phase. Results showed that addition of Monoglyceride (Fatty acid) appear to have a positive impact on growth performance of broiler chicks and it could be considered as a substitute of antibiotic growth promoter (lincomycin). Statistical data was analyzed by applying ANOVA and DMR. In conclusion, Monoglycerides showed better results as compared to lincomycin on the basis of better FCR, Immune titer, and gut health in commercial broiler.

Keywords: Monoglycerides, lincomycin, Immune titer, FCR, growth promoter, histopathological examination

AP-047

EFFECT OF FENUGREEK SEED SUPPLEMENTATION ON EGG QUALITY AND PRODUCTION PERFORMANCE OF SPENT LAYERS

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ABSTRACT

The present research study was conducted to investigate the effect of various levels of fenugreek seeds supplementation on feed intake, egg production, egg quality and liver health of Rhode Island Red spent layers at the research unit of the University of Agriculture Peshawar, Pakistan. A total of 60 spent Rhode Island Red layers were assigned to four groups (FS-0, FS-0.5, FS-0.75, and FS-1) with three replicate having 5 birds each and were kept in cages for 28 days in open sided house. Group FS-0 was kept as control while groups FS-0.5, FS-0.75, FS-1were provided with fenugreek seed powder in the ration at the rate of 0.5, 0.75 and 1% respectively. Egg production and feed intake was recorded on daily basis and from daily data weekly and over all egg production and feed intake was determined. Egg shell weight, egg weight, egg shell thickness, Haugh unit, albumin height and yolk weight were determined on weekly basis. Dietary supplementation of fenugreek seed significantly ($P<0.05$) decreased feed intake at all recorded stages. At first week significantly higher feed intake was recorded for the control group (105.06±0.279) and was followed by group FS-0.5 (103.79±0.067), FS-0.75 (103.57±0.058) while lowest intake of feed was noted for group FS-1(101.59±0.278). The same trend was observed during week-2, -3 and -4. Overall higher feed intake was noted for the control group (105.16 ±0.198) while lower intake of feed was noted for group FS-1 (101.93±0.306). Significantly higher ($P<0.05$) egg production was recorded for group FS- 0.5 followed by group FS-0.75 while lower egg production was recorded for the control and group FS-1. Egg quality traits including egg shell weight, egg weight, egg shell thickness, Haugh unit, albumin height and yolk weight were ($P>0.05$) not affected by supplementation of fenugreek seeds. Supplementation of fenugreek seeds improved liver function test indicated by decreased liver enzymes including Alanine aminotransferase (ALT) and Aspartate aminotransferase (AST). Significantly higher ($P<0.05$) ALT and AST levels were recorded for the control while lower ($P<0.05$) ALT and AST values were recorded in supplemented groups. It is concluded from the present study that supplementation of fenugreek at the rate of 0.5% increased egg production without affecting egg quality traits and liver health.

Keywords: Layers, egg quality, cholesterol

ED-048

DETERMINATION OF RED AND WHITE MEAT CONSUMPTIONS OF ADULT INDIVIDUALS LIVING IN AKŞEHIR

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ABSTRACT

This study has been carried out to the red and white meat consumptions of the people in the district Akşehir. This study was carried out on 300 adults (age 18 and over),who reside in Akşehir and are randomly selected, in 2017 January and February. In the study, a questionnaire, formed as a result of literature review, was used as a data collecting instrument. According to the data obtained, 77.3% of those participating in the study are females and 22.7% are males. It was identified that 54.7% of the participants were in the range of ages 18-30, 30.8 %, ages 31-50, and 14.5%, age 50 and over. It was found that 49.3% of the participants consumed red meat the most in their diets; 44.00%, poultry meat; and 6.7%, fish and other products. When the consumption amount of monthly red meat of the individuals participating in the study were assessed, it was identified that 42.8% of them consumed red meat less than 500 g; 23.4%, 500 to 1000 g; 19.4%,1001 to 1500 g; and 14.4%, more than 1500 g. When those participating in the study were assessed in terms of monthly fish meat, it was found that 64.7% of them consumed fish meat less than 500 g and 5%, more than 1500 g. At the end of the study, although the most preferred sort of meat was red meat, it was identified that the large majority (42.8%) of those participating in the survey consumed red meat less than 500 g. Fish was identified as the sort of the least preferred meat in diet, it was concluded that 64.7 % of the participants consumed fish meat less than 500 g. The reasons for consuming less meat in our society should be researched and precautions should be developed toward solution.

Keywords: Red meat, adult, fish, poultry

ED-049

IDENTIFICATION OF THE PREFERENCES OF HEALTHY ADULTS ABOUT RED AND WHITE MEAT CONSUMPTION

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ABSTRACT

This study was carried out to identify the preferences of the healthy adults about red and white meat consumption. This study was carried out on 300 adults, who reside in Akşehir and are randomly selected, in 2017 January and February. In the study, a questionnaire, formed as a result of literature review, was used as a data collecting instrument. It was found that 73.4% of those participating preferred bovine meat; 18.3%, mutton, and 18.3%, goat's meat. The preferences of the participants to purchase red meat were found as meat cubes with 52.9%; mincemeat with 34.6%; fillet steak with 4.2%; chopped steak with 3.1%;and beefsteak with 2.8%. While chicken meat is almost completely (99%) as poultry meat, the rate of those preferring turkey and bird meat was identified to be 0.7% and 0.3%, respectively. The preferences to purchase poultry meats were identified as whole body with 52.7%; chicken breast with 25%; and drumstick with 18%. In the preferences to purchase fish meat, anchovy was identified as the most preferred sort of fish with 58.7^% and this was followed by salmon with 25.7%. It was identified that the criteria the individuals participating in the study pay attention the most, while purchasing the red and white meat, as date of expiry (70.7%), color and appearance (19.7%), brand and firm (4%), packing (1.7%), price (1.7%), nutritional value (1.7%), and other factors (0.7%). It was found that the most preferred meat was bovine meat as red meat; chicken meat as poultry meat; and anchovy as fish meat. The criterion the participants pay attention the most, while purchasing the red and white meat, was identified to be date of expiry. With the similar studies to be carried out in the different regions, the preferences of our society can be evaluated more comprehensively.

Keywords: Meat, healthy, adults, chicken

AH-050

CONJUGATED LINOLEIC ACID IN ANIMAL SOURCE FOODS AND ITS EFFECT ON HEALTH

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ABSTRACT

Conjugated linoleic acid (CLA) is a positional and geometrical isomer of linoleic acid and the most common isomers 9c,11t-18:2 and 10t,12c-18:2. CLA isomers present the most commonly in the meat, milk, and other products, which are obtained from ruminant animals, while they come to our face in egg in relatively less amounts. Synthesizing isomers from linoleic is carried out in two different ways and these are microbial bio-hydrogenation of linoleic acid to stearic acid in rumen or desaturation of trans vaccenic acid to CLA isomers through Δ9-desaturaz enzyme in mammalian glands and adipose tissues. That CLA isomers, which has anti-carcinogenic, anti-atherogenic, and anti-diabetic, is provided from animal resources such as meat, milk, and meat led the necessary studies to be carried out to increase CLA concentrations in these products. In this study, it has been attempted to give information about the sources of CLA and factors influencing CLA content in these sources and effects of CLA on health.
Keywords: Fatty acids, meat, milk, poultry

IDENTIFICATION OF PROCESSED MEAT PRODUCTS CONSUMPTION OF HEALTHY ADULT INDIVIDUALS LIVING IN AKŞEHIR

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ABSTRACT

This study was carried out to identify the processed meat products consumption of the people living in the district Akşehir. This study was carried out on 300 adults (age 18 and over), who reside in Akşehir and are randomly selected, in 2017 January and February. In the study, a questionnaire, formed as a result of literature review, was used as a data collecting instrument. According to the data obtained, 61.8% of those participating in the study are females and 38.2% are males. While 17.8% of the participants stated that they found processed meat products healthy, 62.8% expressed that they found it unhealthy and 39.4% did not have any ideas. While 35.5% of the individuals participating in the survey had information about the production of processed meat products, 33.6% expressed that they did not have any information about it and the remaining 30.9% did not have any idea. 36.8% of those participating in the study consumed the processed meat product at least once a week; 26.6%, every fifteen days; and 21.7%, once a month. While 6.9% of those participating consume processed meat product every day, 7.9 % don't consumes processed meat products at all. As a result of the study, although 62.8% of those participating in the survey consider that processed meat products are unhealthy, only 35.5% of them expressed that they had information about the production of these products. Although the large majority of those participating in the study (62.8%) consider that the processed products are unhealthy, only 7.9% do not consume these products. As a result of the study, it was seen that the society did not have enough information about this issue. The reasons for this state should be researched and the society should be adequately informed about this issue.

Keywords: Meat, processed, health, information

AP-052

POTENTIAL OF RED MEAT PRODUCTION IN TURKEY

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ABSTRACT

Animal source foods have an important place in human diet, due to the fact that they are rich in terms of digestible protein in high rate. Especially child and young population, that all societies are nourished at the adequate level with animal source foods have a great importance to the physical and mental development. In the studies carried out, for adequate and balanced diet, it was concluded that at least 40 to 50% of daily protein need should be met from animal source foods such as red meat, white meat, milk, and egg. Red meat, one of these foods, is obtained from skeletal muscles of butchery animals and is considerably necessary for a healthy growth and development thanks to high biological value - protein and other dietary members it contains. Being able to meet this need can be enabled society to be able to reach sufficient amount of red meat with minimum cost. Therefore, it is necessary to know the potential of red meat production and the necessity to increase it comes to our face by appropriate breeding policies. In this study, in the light of the last fifteen years, the actual information was attempted to be given regarding the potential of red meat production and animal existence in Turkey.
Keywords: Red meat, society, consumption, quality

ED-053

NANOTECHNOLOGY IN AGRICULTURE AND FOOD INDUSTRY: AN OVERVIEW OF APPLICATIONS AND CHALLENGES

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ABSTRACT

The word nanotechnology is based on the prefix “nano”, the Greek word which means “dwarf”. Furthermore, nanotechnology generally deals with materials having a size range of 0.1 to 100 nanometers resulting in unique physicochemical properties as compared to their macroscopic counterparts. Nanotechnology has a wide range of potential applications ineveryday commercial products, drug delivery and pharmaceuticals. Recently, many scientists and engineers have recognized number of uses of nanotechnology in agriculture, livestock farming and food industries. Use of nanotechnology based product in agriculture has bright prospects for enhancing the efficacy of agrochemicals and bioavailability of nutrients used through nanoformulations of fertilizers, improving crop yield through bionanotechnology, better control of pests and diseases, development of a nanoencapsulated pesticide formulation, remediation of contaminated soil and water, improving the shelf-life and quality of fruits vegetables and flowers, etc. Nanotechnology has revolutionized almost all the disciplines of veterinary and animal sciences through applications in molecular biology, biotechnology and by providing new small scale tools and materials that are beneficial for living organisms. Many reports have shown evidence that nanoparticles may be good candidates foranimal growth promotion by disease diagnosis, treatment, animal nutrition, animal breeding, reproduction and value addition to animal products.The use of nanotechnology also has undoubted benefits for food sector through the use of smart biosensors, packaging materials, and nanonutraceuticals. The benefits of nanotechnology are widespread, as it is a new technology; there are also concerns about toxicity, the impact on human and environmental health. In this review, we intended to cover some of the developments in nanotechnology and their applicability to agriculture,livestock farming and food systemsalong with potential adverse effects including its legal and regulatory aspects.

Keywords: Nanotechnology, agriculture, quality, toxicity

ED-054

THREATENED WILD MORELS AND MOUNTAIN LIVELIHOODS IN NORTH WEST PAKISTAN

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ABSTRACT:

Rare, short seasoned, wildly grown wild morels are highly valuable edible mushrooms that weigh in gold in worth. Morel exports play a significant role in the socioeconomic condition of mountainous communities of Pakistan. During the months of March to April, picking, drying and selling these forest beauties to exporters is one of major livelihood strategy of these communities specially who are involved in livestock keeping. Wild morels require precise weather conditions to grow and climatic change have resulted in inconsistent precipitation patterns shortening the growing period of morels from two months to one month and in some areas like Swat and Nathiagali, morels have disappeared completely. Deforestation and lack of knowledge related to sustainable practices in morel harvesting has also contributed to the threatening situation for their production and exports. The situation is dire for both local and national economy and ecology. Implementing a carefully designed conserving program involving local communities is highly required. Research programs for creating non timber inventory and preserving forest biodiversity, conducting awareness and training programs in the area for sustainable harvesting techniques for edible forest produce and restrictions over non timber and timber harvests from these forests will help not only saving biodiversity but also sustaining and improving incomes of local households and improving overall economics of the area.

Keywords: wild morels, livelihood strategy, sustainable harvest, edible forest produce, forest management

ED-055

POLITICAL/IDEOLOGICAL STUDY AND ACADEMIC STUDY: SCIENCE, HISTORY AND TEACHING.

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ABSTRACT:

There's a lot of difference between the reading of the books with specific political/ideological angle and academic angle. The motives behind the both types of studies are entirely different in our society unfortunately. During the political study, the activists, who already have accepted the told version by the leadership, are mainly concerned with to collect the negative/positive points in order to justify the claims of their leadership regarding the person/event. Political activists are going to perceive the things via certain political lenses, fixed on their eyes by the leadership, which ultimately lead the construction of the biased approach. However, academic study demands objective approach. The academic reader hasn't/shouldnt relatively strong sentiments with the person/event, therefore he/she is only concerned with to understand the things properly. His prime concern is to draw comparatively right conclusion, rather than justifying and then propagating the view point of his leadership.And teachiny is an other ideological main department but there is not any specific methods that how to teach history, geograpphy,science and technology.

It is the need of the hour to promote academic traditions, So that social sciences and pedagogical development can be flourished, which ultimately affect the multi dimensional development of our society.

Keywords: political/ideological study, academic, social sciences, multi dimensional development

AH-056

THERAPEUTIC EFFECT OF HERBAL PLANTS EXTRACT IN BROILER CHICKEN CHALLENGED WITH COCCIDIA

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ABSTRACT

Coccidiosis is a parasitic disease of poultry birds caused by *Eimeria* species associated with high morbidity, mortality and treatment cost causing a huge economic loss to the poultry industry. The present study was designed to investigate the therapeutic effect of *Azadirachta Indica, Curcuma longa and Calotropis procera* in broiler challenged with *Eimeria* species. To this end, a total of 360 birds were reared, divided into 6 groups, group A negative control (non-infected and non medicated), group B positive control (infected non-medicated) group C standard group (infected and medicated with Amprolium® @1.25g), group D infected and medicated with *Azadirachta Indica* @ 2g, 4g and 6g, group E infected and medicated with *Curcuma longa* @ 4g, 8g and 12g and group F infected and medicated with *Calotropis procera* @ 4g, 6g and 8g respectively. Group B, C, D, E & F were challenged with 30,000 sporulated oocysts of *Eimeria* species per bird at 21 days and group A was given equal volume of distilled water. Parameters like feed consumption, weight gain, FCR, oocysts in feaces (OPG), mortality and clinical findings were recorded. Current results revealed that the feed intake, weight gain and FCR of non-infected non-medicated group were significantly higher ($P<0.05$) than that of infected non medicated groups. The broiler of group C treated with Amprolium had better significant ($P<0.05$) feed intake and weight gain in comparison to other treated groups. Gross lesions were observed in all medicated groups at low dose level comprising of hemorrhages, congestion and thickening of intestinal wall. Histopathological findings of intestine revealed the sloughing of intestinal villi, leukocytic infiltration and hypertrophy of goblet cell. However no apparent lesions were observed in medicated groups fed with high dose. The result exhibited that *Curcuma longa* @12g/Kg feed had an excellent performance in term of low mortality and oocysts count as compared to other treatment groups.

Key words: *Broiler, Coccidiosis, Amprolium, Azadirachta Indica, Curcuma longa, Calotropis procera.*

AH-057

GENOTOXIC AND TOXICOPATHOLOGICAL EFFECT OF AFLATOXIN B_1 IN GRASS CARP (*CTENOPHARYNGODON IDELLA*)

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ABSTRACT

The present study was designed to evaluate genotoxic and toxicopathological effect of AFB_1 in Grass carp. A total of n=150 Grass carp (42 ± 5 g) were divided into 5 groups each having 3 replicates. Group A was kept as control and other were exposed to different concentrations of AFB_1 (25, 50, 75 and 100 ppb/kg of diet respectively) for 49 days. The average weight gain and specific growth rate (SGR) of fish was significantly higher in group A (15.35g and 0.63% respectively) as compared to group E (6.55g and 0.28% respectively). The feed conversion ratio (FCR) varied significantly P<0. 05 between control group and groups containing 75 and 100ppb AFB_1. No mortality was observed in all treated groups. The increasing concentrations of AFB_1 significantly lowered the hematological profile as compared to the control group. Similarly a significant increase in the serological tests such as aspartate amino transferase (AST), alanine amino transferase (ALT), glucose, urea and creatinine was observed in AFB_1 treated groups. The serum protein and albumin level was significantly higher in control group (6.05 & 4.2g/dl) with the lowest in group E (3.8 & 2.06g/dl). The genotoxicity of AFB_1 was only observed at 75 and 100 ppb/kg, having micronucleus frequency percentage of 0.85 and 2.15 % respectively. The histopathological study revealed that AFB_1 can cause pathological changes in liver, kidney, intestine and gills. The present study concluded that AFB_1causes reduction in fish production performance, effect the hematological and blood biochemical profile, tissue and DNA damage in fish.

Keywords: Aflatoxin B_1, Hematology, Serology, Histopathology, Micronuclei

AH-058

ANAEMIA – STILL A MAJOR HEALTH PROBLEM

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ABSTRACT

In Pakistan, approximately 40-50% boys and girls of primary school and preschool children (aged 2 ½- 4 years), 39% of adolescents, 54% girls, 30% boys, 30% of the adult females, 47% of the children and 69% children <2 years of age were reported to affected of Iron deficiency anaemia. The presence of anaemia is basically defined as the lower level of red blood cell count and haemoglobin than the normal range. According to World Health Organization, anaemia is considered as a severe health problem. Like Pakistan, iron deficiency anaemia is also severe health problem in Turkey because the staple food of Turkish people is wheat and 58% of the energy comes from bread with other cereals, which is the major percentage and the average diet from iron is lower than the recommended daily allowance. Women of childbearing age and young children have greater prevalence of iron deficiency anaemia i.e. 40.2% and nearly 2 billion people effects all over the world and nearly one third of the rapidly growing population of approximately 7 billion people. The causes of anaemia were low bioavailability of iron, poor intake of iron, parasitic infections, multiparity and high consumption of those foods that inhibits the absorption of iron, such as tea. For overcoming this severe health problem different six basic implementations have an important role in Pakistan which are: 1) Determining anaemia prevalence 2) Nutrition Training 3) Iron supplementation 4) Controlling parasitic, bacterial or viral diseases 5) Iron fortification in foods 6) Dietary Modifications. To overcome iron deficiency anaemia The Ministry of Health in cooperation with governmental and non-governmental institutions should focus on preventive programs. Nutrition Education is one of the most important prevention program to create awareness among public towards a sound eating habits and healthy lifestyle.

Keywords: Anaemia, health, problem, diet, iron

FSE-059

MEASUREMENT OF AWARENESS LEVELS OF ADULT INDIVIDUALS LIVING IN AKŞEHIR ABOUT FOOD SECURITY

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ABSTRACT

This study has been carried out to measure awareness levels of the people living in Akşehir about food security. A face to face survey was made on a total of 300 adults, who dwell in Akşehir in 2017 and were randomly selected. According to data obtained, 58.7% of those participating in the study were females and 43% were males. The mean age of the individuals was identified as 29.87 ± 12.37 years and 54.43% of them reported they were graduated from university. According to the results of the study, it was identified that 82% of the consumers were aware about food security; 63.7 % had information about the application of Food Security Hotline 174; and 80.7% could make extra payment for secure food. 94% of the consumers preferred to buy packaged product, while buying food products and 19.7% of them stated that they always read the label on the product. As a result of the study, it was identified that large majority of the individuals participating in the survey was aware about food security. Although the consumers made a complaint when they met bad food, 62.6 % had a positive result and 37.4% could not reap anything. The reasons for this should be studied and necessary arrangements should be made for being able to obtain results in favour of consumers. In addition, although a great part of consumers prefer to use packaged food, the number of those stating that they regularly read the label information on packing in every shopping is quite few. In order for the consumers to have more awareness about this subject and be able to more easily reach the secure food, more comprehensive studies should be carried out.

Keywords: food security, awareness, quality, labelling, packaged food

AH-060

TOXINOTYPING OF *CLOSTRIDIUM PERFRINGENS* INFECTED LAMBS AND KIDS IN DIFFERENT TOPOGRAPHIC AREAS OF KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT

In this study project, pathogenic strains of *C. perfringens* were isolated from diseased lambs and kids. The isolates initially identified by colony characters, Gram staining, biochemical tests and CFU/g. The isolates were further analyzed by conventional PCR in order to find out the presence of the alpha, beta, epsilon and iota toxin genes. Pathogen was isolated from 73 of 168 lambs and 86 of 170 kids, having the signs of enterotoxaemia and the animals or their mothers had not been vaccinated previously against C. perfringens. Genotyping of 73 strains from diseased lambs indicated (13.10%) prevalence type A, (9.52%) prevalence type B and (20.83%) prevalence of C. perfringens type D. Of 86 strains kids (34.71%) prevalence type A, (5.88%) prevalence type B and (10.00%) prevalence of C. perfringens type D. C. perfringens type C and type E were not detected in both lambs and kids.

Keywords: *C. perfringens*; lambs, kids, toxin genes, PCR

AH-061

HEMATO-BIOCHEMICAL ALTERATIONS IN *CLOSTRIDIUM PERFRINGENS* INFECTED GOATS

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ABSTRACT

The study project was designed to determine the affects of *Clostridium perfringens* type D infection on hematological and biochemical parameters in goats. Purposive blood samples were collected from 6 healthy and 12 diseased goats positive for *C. perfringens* infection. Mean erythrocytes count (RBC) and hemoglobin level decreased significantly ($P<0.05$) in diseased animals while the white blood cells (WBC) increase significantly ($P<0.05$) in diseased animals compared to the healthy animals. However non-significant differences ($P>0.05$) were observed in packet cell volume (PCV) and platelets count in healthy and diseased animals. Biochemical analyses indicated significant increases in liver enzymes, total bilirubin, Serum creatinine, blood urea and glucose increased significantly ($P<0.05$) in diseased goats. The results demonstrated that fluctuation in most of the mean hematological values remained within the normal range however the mean liver enzymes, total bilirubin, serum creatinine, blood urea and glucose levels gone beyond the normal levels which demonstrated sever damages to liver and kidneys.

Keywords: *Clostridium perfringens*, Goats, RBC, WBC, Platelets, PCV, Bilirubin, Blood urea, serum creatinine.

AH-062

QUANTIFICATION, ISOLATION AND PATHOGENOMICS F PATHOGENIC SHIGA TOXIN *ESCHERICHIA COLI* O157:H7 ALONG THE PRODUCTION AND SUPPLY CHAIN AROUND HUBEI OF CHINA

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ABSTRACT

Shiga toxin *Escherichia coli* (STEC) O157:H7 is an important zoonotic food borne pathogens causing gastroenteritis that may lead to life threatening Hemorrhagic Colitis (HC) and Hemorrhagic Uremic Syndrome (HUS). Animal food, particularly poultry, cattle and pig are the major vehicles of diseases caused by food-borne pathogens. A total of 285 samples including 125 tonsil swabs (from 4-6 weeks old clinically healthy animals from different herds of five intensive farms) and 160 samples (20 each liver, meat, intestine and kidney) from different slaughter houses and markets around Hubei province were studied for the prevalence and quantification of STEC O157:H7 along the production and supply chain (PSC). The overall prevalence of E. coli O157:H7 was found 47% along PSC, being higher in supply chain (73.7%) as compared to animal farms (12.8%). Along the supply chain, the highest prevalence was found in slaughter houses (86.25%, 69/80) followed by wet (80%, 32/40) and super markets (42.5%, 17/40). The MPN values ranged from 3-1100MPN/g in overall positive samples, being higher in slaughter houses followed by wet and super markets. Except from intestine and meat samples of slaughter house, the MPN was found higher in summer as compared to winter samples. 8 STEC O157:H7 isolated from meat and liver samples were tested in Balb/C mice for pathogenicity. After development of clinical signs and symptoms, 50-83.3% mortality were produced in the infected mice. Histopathological investigations revealed visible necrosis of intestinal epithelial cells, cell debris shed full of the intestine while in the kidney, renal cortical portion of tubular epithelial cell necrosis were observed. STEC O157:H7 is prevalent along PSC around Hubei of China in different proportions being alarmingly higher in supply chain and markets which is a matter of concern for public health.

Keywords: *Escherichia coli*, O157:H7, STEC, MPN PCR, Production, supply chain

BRM-063

ANTIMICROBIAL RESISTANCE OF BACTERIA ASSOCIATED WITH RAW MILK CONTAMINATED WITH ANTIBIOTICS RESIDUES

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ABSTRACT:

Milk and other dairy products are produced and processed in Sudan by traditional herdsmen and milk maids. This study was carried out on three hundred raw milk samples (200 cows, 50 camels and 50 goats) that collected from farms, sale points and collection points in Khartoum State during winter and summer season. Milk samples were examined for the presence of antibiotics residues. Also, isolation and identification of bacteria that found in antibiotic contaminated milk and their resistance to some antibiotic residues (ampicillin, cloxacillin, cefotaxime and cephalaxin) were done. Eighty (40%) of cow milk samples were positive to antibiotics residues, while all camel and goat milk samples were negative. Ten (12.5%) and 23 (28.75%) of the positive samples were found during winter and summer, respectively. The positive samples were 47 (58.75%), of which 15 (18.75%) were found during winter and 32 (40%) were during summer. The isolated *Staphylococcus aureus* (2; 0.49%) and *S. auricularis* (4; 0.98%) were sensitive to ampicillin, cephalaxin, cloxacillin and resistant to cefotaxime (75%). *Bacillus cereus* (18; 4.4%) showed resistance to ampicillin, cephalaxin and cloxacillin (100%), while it was sensitive to cefotaxime (93.4%). *Bacillus coagulans* (3; 0.7%) and *B. pummilus* (4; 0.9) were resistant to ampicillin and cloxacillin (100%), however they were sensitive to cephalaxin (33.3% and 50%, respectively). *B. sphaericus* (4; 0.9%) was sensitive to ampicillin (75%), cephalaxin (25%) and cefotaxime (50%) and resistant to cloxacillin (100%). *B. amyloliquefanciens* (3; 0.7%) was resistant to ampicillin and cloxacillin (100%). *Klebsiella* spp. isolates showed sensitivity to ampicillin (33.3%), cephalaxin (100%), cefotaxime (50%) and resistance to cloxacillin (100%).The present study concluded that the quality of milk obtained from cows was lower compared to that of goats and camels. Also, high bacterial loads and antibiotic residues were found in the milk samples collected during summer season compare to winter season.

Keywords: antimicrobial resistance, antibiotics residues, raw milk, *Staphylococcus*, *Bacillus*, *Klebsiella*, quality of milk, bacterial loads

ED-064

PROCESSING AND UTILIZATION OF TRADITIONAL DAIRY PRODUCTS IN RAWALAKOT AZAD JAMMU AND KASHMIR, PAKISTAN

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ABSTRACT

Azad Jammu and Kashmir has diversified traditional dairy product these traditional dairy products can attract the peoples for their unique flavour. The main aim of this study was to assess processing and utilization of traditional dairy products processed in the ruler areas of the Azad Jammu and Kashmir, Pakistan. A single visit multiple subject formal survey was conducted for collection data. A total of 65 households from rural areas of the district Rawalakot, were individually interviewed using a pre designed questionnaire. The major dairy products processed in the targeted area include butter, ghee, boli, kari and Kalari batt. Among these, two of the traditional dairy products, boli, Kalri batt, kari and are unique to this area. Basically, all these traditional dairy products are prepared by simply from the raw milk by fermentation spontaneously at room temperature (17° to 28°C) and then cooked at high temperature (105° to 150°C). The respondents claim that these products are of high nutritional values, hygienically safe and have therapeutic properties. Many aspects of boli, kari, and Kalri batt such as physico-chemical characteristics, microbiological and sensory properties are unknown. Thus, detailed scientific investigation needs to be conducted in order to verify the claimed nutritional and medicinal properties of these products.

Keywords: Dairy, processing, utilization, survey

ED-065

VALUE ADDITION AND PROCESSED PRODUCTS OF UNDERUTILIZED FRUITS FOR FOOD SECURITY IN AZAD JAMMU AND KASHMIR, PAKISTAN

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ABSTRACT:

Azad Kashmir is endowed with agro-biodiversity such as underutilized fruits that are highly nutritious, have health benefits and income generation potential that need to be exploit. These underutilized fruits can be processed in to different products which could contribute to food security and ensure availability of these fruits during off-seasons. The technology should be developed and further disseminated to the community for ensuring food insecurity. These underutilized fruits are important sources of food for rural communities especially at times of food shortage, hunger and other disasters. They provide important compounds for health benefits such as antioxidants, vitamins and minerals. These fruits are considering income generating for rural communities. Different types of food products were processed from these fruits and evaluate for the preference consumer. According to consumer preference test, the juices prepared from apricot and plump have lower value due to its low pH (3.17). The quality of jam, taste and colour were acceptable and preferred. The two products made from fig and pear was all preferred. The microbiological quality of the processed products confirmed their safetycharacteristics. The prepared products were also evaluated for microbial quality and safety. The findings shows that the products prepared in this experiment were viable, of good quality. Underutilized fruits have great potential to contribute in food and nutritional security.

Keywords: underutilized fruits, food security, agro-biodiversity, income generation, food products

AH-066

HYGIENE AND DAIRY MANAGEMENT PRACTICE DURING MILKING AT RAWALAKOT AZAD JAMMU AND KASHMIR, PAKISTAN

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ABSTRACT

Milk is a complete diet for human it contains numerous nutrients and it makes a significant contribution fulfill the body's needs for minerals, vitamin. If milking is carry out without taking adequate hygienic measures this will cause milk quality deterioration and risk for the consumer health. The main aim of this study was to evaluate some hygienic practices of milking man on dairy farm of Rawalakot. To achieve this objective a study was designed and questionnaires were developed, pre-tested and administered to the selected individuals in the study. About 20 milking personnel and farm attendants related to the selected farms were interviewed. Consequently, hygienic practices employed in the study farms such as house cleaning, udder cleaning, and hand washing practices and milking utensils. The study findings shows that the farmers did not fallow hygiene practice in their routine dairy management and most of the farm hygienic practices and parameters like hygienic condition of the milking environment, sanitation of the milk containers, udder and teats cleaning, use of separate towel for each cow and the personal hygiene of the milkers were not fully performed by most of the farm owners. The farmers used a single cloth in washing the udder for several animals and did not thoroughly wash their hands during milking. Low grade plastic cans and bottles which could cause quality deterioration were used in milking and delivering milk to the collection points and consumer.

Keywords: Milk, management, hygiene

AH-067

NUTRACEUTICAL APPLICATIONS OF ZINC, MANGANESE AND COPPER IN THE METABOLISM OF THE RUMEN AND IMMUNE FUNCTION

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ABSTRACT

Balance among the essential nutrients, protein, carbohydrates, fats, minerals and vitamins is a key component in striving towards optimum animal production. The role of trace minerals in animal production is an area of strong interest, as the trace elements recognized the most important functional components of numerous metabolic events. Trace minerals are of basic needs by the body in trace amounts, ranging from 0.10 to 50.0 mg/kg of dry matter in the feed of bovine animals. These trace elements are essential for all biochemical processes of the body that supports the growth and the appropriate maintenance. For example, copper is necessary for the function of the superoxide dismutase and in the elimination of toxic by-products of metabolic pathways. The elimination of these toxic by-products allows metabolism to perform effectively, uninhibited by damaging oxygen free radicals. Manganese, an important trace mineral, essential for development, metabolism, in the antioxidant system and has a slight effect on stimulating the activity of the Urease. Zinc, an important trace mineral for the enzymatic function, help in the regulation of the production of nucleic acid, the metabolism of carbohydrates and protein synthesis, thus providing a stable framework for the development. The immune system is part of the defense of the host against the destructive forces from the outside of the body, such as bacteria, fungi, parasites and viruses, or of the Interior, such as the malignant cells or those who produce auto-antibodies. Trace minerals have an important role for normal immune function and disease resistance including zinc, copper and manganese. An insufficiency in at least one of these components can compromise immunocompetence of an animal. The immune framework is made of two branches: the innate or non-specific of the immune framework, and the adaptive or specific framework of immunity. In this review paper, an effort has been established to scrutinize the effects of minerals supplement in the metabolism of rumen and their individual or joined effects on immune function in different species of animals.

Keywords: Minerals, copper, manganese, zinc, metabolism, ruminants

ED-068

REUSE OF WASTE WATER IN AGRICULTURE RECOVERED FROM WASTE WATER TREATMENT SYSTEMS

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ABSTRACT:

In adequate access to sanitation and clean water has become one of the most pervasive problems affecting people throughout the developing world. Conventional waste water treatment technologies have proved ineffective in solving complex water related issues resulting from rapid industrialization and urbanization throughout the developing world. Membrane bioreactors (MBR) and Phytoremediation system under study showed to be very robust Eco technologies for domestic wastewater treatment and reuse. The present study was conducted at NUST H-12 campus Islamabad to compare the water quality of MBR and Phytoremediation system in terms of Physico-chemical and Biological parameters and microbial species present in the system. Phytoremediation system under study was planted with *Typha latifolia, Pistia stratiotes, Centella asiatica*. An excellent overall treatment performance was exhibited on the conventional water quality parameters (up to 90.8% for TSS, 67.7% for COD, 95% for turbidity and 90% for total coliform) by Phytoremediation system. Treatment performance of MBR system was up to 99% for TSS, 83% for COD, 91.5% for turbidity and 99% for total coliform and final effluents proved to compile with the EPA regulations. The high removal rates were achieved at higher temperature as well as other meteorological parameters (wind speed, air pressure, relative humidity, global horizontal irradiance) showed a significant positive and negative correlation with the removal efficiencies. Predominant species isolated and identified form wastewater of Phytoremediation system belongs to the phyla Proteobacterium (*Enterobacter cloacae, Enterobacter kobei*, *Enterobacter hormaechei*, *Enterobacter asburiae*, *Enterobacter aerogenes, gamma proteobacterium*, *Franconibacter pulveris, Citrobacter freundii*, *Shigella dysenteriae*, *Escherichia albertii* and *Escherichia coli*). While, predominant bacterial species isolated and identified from activated sludge of MBR system were *Salmonella enterica, Pantoea dispersa, Shigella dysenteriae, Enterobacter hormaechei* and *Salmonella* waycross and they too belong to the phyla proteobacteria. High efficiency of these treatment systems will cater the water need of agricultural land and divert the path of fresh water to drinking purposes.

Keywords: waste water, agriculture, recovered, waste water treatment systems, membrane bioreactors, *Enterobacter, Franconibacter, Citrobacter, Escherichia*

BMR-069

CLINICAL & RESEARCH LABORATORIES IN PESHAWAR CITY OF KP PROVINCE: ANALYSIS OF BIOSECURITY MEASURES PREDICT INSECURITY

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ABSTRACT

Biosecurity is an emerging concept not well understood by the local community. It is the protection, control and accountability of biological agents and toxins within laboratories, in order to prevent their loss, theft, misuse, unauthorized access or intentional unauthorized release. All types of wet laboratories are responsible for biosafety and biosecurity that protects their workers, animal population, and the environment from exposure or spread of pathogens they come across with. The purpose of this preliminary study was to collect data in order to assess and evaluate beside biosafety practices the measures being taken for biosecurity in clinical diagnostic and research lab. In this study hundreds of clinical labs, Research labs and Academic purpose labs for routine practical work both in public and private setups were focused. The visits to the sites were pre scheduled and in some cases were informal and unscheduled with the hope to get a clear picture of the practices/measures. A detailed observational survey and unwritten questions were used to elicit information. The focus was on laboratory licensing system, infrastructure, administration, quality assurance, collection, handling, processing, storage and transportation of clinical samples, waste disposal, Lab records, access to biohazardous materials and security checks on pathogens and on researchers and workers. Based on Standard BRM Guidelines, maximum numbers of the labs were below minimum required standard and were categorized as BSL-0. Variety of BSL-2 and BSL-3 category bacterial and viral pathogens were easily assessable and, therefore, were isolated and identified in our lab. We conclude that lab management is lacking at all levels. It is recommended that biosecurity concerns be conveyed to all stakeholders for designing and implementing action plan.

Keywords: Biosecurity, biological agents, academic, BRM guidelines, BSL-2, BSL-3

AP-070

ECOLOGICAL BASED FEED INVENTIONS FOR LAMBS/KIDS FATTENING MANEUVER TO EARN GREATER PROFIT REVENUES DURING EID-UL-AZHA MARKETING IN PAKISTAN

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ABSTRACT:

The main aim of this study was to determine the impact of supplemental feeding on lamb/kids fattening based on feed availability in three ecologies during Eid-Ul-Azha marketing of Pakistan. For this purpose, private farmers (3-5) from each of three research sites namely; Dhulli village at district Chakwal in Punjab, Loralai in Balochistan and Kunri village at Umerkot in Sindh were selected for the fattening trials. A total 394 male animals between 9-10 months age were involved for fattening trials for a period of 30 and 45 days. Three feed formulations i.e., T1 (Wheat bran13%, maize grain40%, molasses9%, common salt1%, di-calcium phosphate1%, soybean 12%, canola cake9% and maize gluten (30%) 15%), T2 (wheat bran16%, maize grain40%, molasses9%, common salt1%, di-calcium phosphate1%, soybean 10%, canola cake8% and maize gluten (30%) 15%) and T3 (Wheat bran15%, maize grain40%, molasses9%, common salt1%, di-calcium phosphate1%, canola cake9 and maize gluten (30%) 25%) were self-prepared as per availability of ingredients for Chakwal site experiment (120 White Shinwar breed Lambs and 64 Beetal breed kids). However two commercial rations T4 (Wheat10%, wheat bran27%, rice polish8, rape seed cake3%, rape seed meal1%, cotton seed cake12%, cotton seed meal1%, sun flower meal1%, maize grain25%, molasses10%, common salt1% and di-calcium phosphate1%) and T5 (Wheat bran15%, Cotton seed cake35%, maize grain24%, common salt1%, di-calcium phosphate1% and barley grain24%) used for Loralai site (180 Black Shinwar breed lambs) and other two commercial rations T6 (Wheat bran 20%, rice polish 5%, rape seed cake 3%, cotton seed meal 12%, maize grain 30%, common salt 1%, di-calcium phosphate 1%, canola cake 8% and maize Gluten (30%) 20%) and T7 (wheat bran 15%, rice polish 5%, rape seed cake 5%cotton seed meal 10%, maize grain 35%, molasses 8%, common salt 1%, di-calcium phosphate 1%, canola cake 5% and maize Gluten (30%) 15%) for Umerkot site (30 Pateri breed lambs) as per availability. The estimated crude protein (CP), total digestible nutrients (TDN) and energy (MJ/kg) in these formulations were ranged between 15-17.85%, 70-91% and 2800-3200 respectively. The overall economic analysis showed that lambs/kids fed with supplemental rations leads to higher profit margins.

Keywords: Ecological based feeding, small ruminants, fattening, Eid-Ul-Azha marketing

AP-071

IDENTIFICATION OF NON-GENETIC FACTORS AFFECTING WEIGHTS AT BIRTH, PRE-POST WEANING, AND GREASY FLEECE PERFORMANCE O F KAJLI SHEEP IN PAKISTAN

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ABSTRACT

The present investigations were to analyzed the influence of environmental factors on various growth performance traits of Kajli sheep in Pakistan. The present study utilizes two large contemporary datasets in sheep to explore factors that influence performance traits. The study was conducted to estimate the non-genetic components of variation influencing various traits of economic importance in Kajli sheep. For this purpose reproduction performance recored of 13715 Kajli sheep lambing collected during 1994 to 2010 at Livestock Experimental Stations Khushab and Khizarabad, Punjab. The data on Birth Weight (BW), 120 days at weaning Weight, (WW), Pre-weaning Average Daily Gain (PRADG), Yearling Weight (YW) and Greasy Fleece Weight (GFW) were evaluated. Location of flock, year of birth (YOB), Birth Season (BS), Birth Types (BT), and sex were the fixed effects in the model. Results showed that, the overall average values for BW (kg), WW (kg), YW (kg), PRADG (gm), and GFW (kg) were 4.13 ± 0.01, 18.70 ± 0.08, 37.52 ± 0.06, 142.34 ± 0.83 and 1.32 ± 0.00, respectively. Year of birth, type of birth, sex and flock influenced ($P<0.001$) BW and GFW whilst season of birth showed no significant differences ($P>0.05$). In WW and PRADG of Kajli sheep, year of birth, type of birth and flock showed influence ($P<0.05$) except sex ($P>0.05$). In yearling weight, all parameters showed effect ($P<0.05$) except type of birth and flock ($P>0.05$). Male lambs were heavier than female lambs, and single born lambs were also significantly heavier than twins ($P<0.05$) at birth. Results reflected that Kajli breed can be improved through selection and better management.

Keywords: Kajli Sheep, Environmental factors, performance traits, variation, Pakistan

AH-072

EPIDEMIOLOGICAL RISK FACTORS, PROPHYLACTIC AND TREATMENT ARRAYS AGAINST PESTE DES PETITS RUMINANTS (PPR) IN DISTRICT DERA GHAZI KHAN IN PAKISTAN

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ABSTRACT:

A cross sectional study was conducted regarding the epidemiology, vaccination and treatments options during August, 2012 to October 2012, in district Dera Ghazi Khan, Punjab, Pakistan. Small holder 246 farmers were interviewed on prevalence of Peste des petits ruminants (PPR). The education level of farmers was 87% illiterate and 13% literate, type of animals in the herd of farmers (sheep 5%, goat 8% and sheep-goat 87%), housing system used by farmers (open 97%, closed 3%), feeding methods in case of farmers (grazing 95%, stall feeding .04% and 4.86% farmers using both grazing and stall feeding), farmers response to vaccination against PPR (yes 6%, no 94%), veterinary services available to farmers (yes 64%, no 36%) among these (64%) farmers only (25%) farmers have the availability of veterinarian in the area while rest of the (38%) farmers having the services of a quake, nomadic movement of farmers of surrounded areas within and out of the district (yes 98%, no 2%), farmers involved in live animals business (yes 71%, no 29%) and (71%) farmers responded that animals were returned from the market during the business activity (at level of confidence $p<0.05$) were significantly associated with the occurrence of PPR in Dera Ghazi Khan district. Farmer's response to self-treatment (yes 12%, no 88%) was found significant. Other managemental practices like quarantine (no 100%), isolation of sick animals from the herd (no 100%), feeding of young animals milk of the sick mothers (yes 100%) and proper disposal of the dead animals (no 100%), spiritual treatment (no 100%) were associated risk factors which were not analyzed due to zero cell values. Morbidity in the vaccinated animals was less (10%) as compared to the unvaccinated animals (38%). As well as mortality rate in young unvaccinated animals was higher (7%) as compared to the vaccinated animals (0.6%).

Keywords: Sheep, Goat, PPR, Pakistan

ED-073

DETERMINANTS OF LABOR FORCE PARTICIPATION OF LITERATE FEMALES – SCOPE FOR CONTRIBUTION IN FOOD VALUE CHAIN

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ABSTRACT:

Women contribute half of the population of Khyber Pakhtunkhwa, Pakistan; and their involvement in the food value chain is evident from their association with livestock and poultry farming, products processing, marketing and services. This study aims at examining why some literate females participate while others do not. Data was collected from 250 females (15-52 years of age) having at least ten-year education. The empirical results of the study show that education, age, number of dependent family members in a household, and the education of the head of the family have positive and significant impact on the female participation rate. On the other hand, marital status, household size, and residence (urban area) have negative and significant impact on the female participation rate. Various factors can improve the female participation rate like: 1) enhancing opportunities of quality education and training; 2) initiating family planning programs and child care facilities; 3) mass awareness campaigns. Dairy Science Park (DSP) has facilitated involvement of female postgraduate researchers in applied fields like quality control, Biorisk Management (BRM) and training activities for economic empowerment of women. Joint action plans developed by DSP and Women University Mardan. The two organizations would utilize the livestock and poultry production, processing, service delivery and marketing resources in the livestock food value chain for entrepreneurship development. Halal status of food value chain will be ensured at various stages of production and processing regarding animal species and food ingredients with special focus on traceability of products. Standards and legislative guidelines would be developed for farming and processing units and service providers as they relate to dangerous and/or infectious pathogens. The educated man and women in region would be facilitated for establishing livestock and poultry based entrepreneurship backed up with hygienic and Halal standards. Sustainable Development Agenda of UN would be supported through #SDGAction9671.

Keywords: Women labor; entrepreneurship; food value chain; biorisk management; quality control; sustainable development goals

AP-074

HOMOFERMENTATIVE BACTERIAL INOCULATION, NUTRITIVE QUALITY AND *ASPERGILLUS* TOXINS EVALUATION OF ALFALFA SILAGE (*MEDICAGO SATIVA*)

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ABSTRACT:

Livestock industry in Pakistan is composed of dairy cattle, buffalo, camel, goat and sheep with a population of 44.40, 37.70, 1.1, 72.2 and 30.1 million heads respectively (Economic Survey of Pakistan, 2016-17). Among various challenges to the livestock industry, the shortage of feed in terms of quantity and quality is one of the serious problems faced by the farmers. To overcome this problem, silage prodcution/making is a good choice to ensure a regular supply of balanced feed to the animals throughout the year. Silage is the preservation of forage based on anaerobic fermentation. Alfalfa (*Medicago sativa*) is a leguminous crop, with rich nutritional values as animal feeds, grown seasonally, and its regular supply can be ensured through silaging the crop. In view of foregoing, present study was planned to assess the quality and nutritive evaluation of alfalfa ensiled under laboratory conditions supplemented with molasses and homofermentative inoculant. In addition, the *Aspergillus* species and their toxins were evaluated. Pre-blooming alfalfa cropwas harvested, chopped and wilted for 2-3 days to achieve dry matter (DM) up to 30-35%. The wilted crop was divided into replicated control and treatment groups supplemented with/ without 0, 100 and 150g of sugar cane molasses/kg and inoculant (4mg/kg; $1x10^5$cfu/g). The alfalfa crop was then ensiled for a period of 45 days. Mycological examination was performed by using Oxytetracycline glucose agar media. AOAC established procedures were followed to find out the nutritional parameters. Digestible energy values were calculated through regression equations. Statistical analysis was conducted by Duncan's multiple post HOC at $P<0.05$ by using SPSS 16.0 software. Findings of present study revealed the inoculant significantly (<0.05) improved the silage characteristics in terms of DM, protein and energy parameters. A rapid and significant (<0.05) reduction in pH was achieved on third day of trial from 7.07 to 4.54 in the T1M1 and T1M2 groups that remained consistent until 45thday of experiment when compared with control group (7.07 to 6.08). Mycological examination revealed the presence of *Aspergillus species* i.e. *A. flavus*, *A. niger* and *A. fumigatus* in ensiled alfalfa crop. Aflatoxins and ochratoxin A were observed withranges of 3-30.30ppband 24-58ppb respectively in alfalfa silage.

Keywords: inoculant, aflatoxins, ochratoxin A, nutrition, mycoflora

PH-075

OCCURRENCE OF *MYCOBACTERIUM BOVIS* IN BOVINE MILK AND CONSUMERS KNOWLEDGE, ATTITUDE AND PRACTICES TOWARD TUBERCULOSIS IN PESHAWAR, PAKISTAN

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ABSTRACT:

This study aims to assess the presence of Mycobacterium bovis (M. bovis) in retail milk derived from local domestic and commercial dairy farms and the knowledge, attitude and practice about tuberculosis (TB) in the high risk M. bovis contaminated milk consumers in Peshawar district, Pakistan. Milk samples were obtained from 92 milk shops and analysed for presence of M. bovis using Polymerase Chain Reaction. Mycobacterium bovis was detected in 8 milk samples (8.7%). Eight hundred consumers of M. bovis contaminated milk were interviewed. Analysis of data indicated that although 97.4% of the participants had heard of TB but only 39.6% knew that cough lasts for more than 3 weeks was one symptom of TB. Only 79.2% had awareness that TB can be prevented and the most frequently stated (48.4%) method of TB prevention was good nutrition. Mean knowledge score for the participants was 12.1± 2.47 out of maximum 22. Mean knowledge score varied significantly with ethnicity, level of education and residential status (Urban vs rural). Overall knowledge about symptom, transmission, prevention and treatment of TB was low. Therefore community's health education focused on increasing knowledge of TB must be initiated.

Keywords: Mycobacterium bovis (*M. bovis*); milk; commercial dairy farms; tuberculosis (TB); consumers; Peshawar; Polymerase Chain Reaction; Urban vs rural

AP-076

EFFECT OF YEAST CULTURE (*SACCHROMYCES CEREVISIAE*) ON LACTOGENESIS IN ACHAI CATTLE

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ABSTRACT:

The effect of yeast culture (Saccharomyces cerevisiae) on feed intake, milk yield and milk composition of Achai cattle was studied at Livestock Research & Development Station Surezai, Peshawar. Cows were kept in three groups A, B and C. All animals were fed with basic diet, comprising of green fodder, wheat straw and compound concentrate as per their maintenance and production requirement twice daily. Animals in group A were kept as control, while the ration of group B and C was top dressed on daily basis with 20 and 40 g yeast culture/animal, respectively. Fresh drinking water was available to all groups' animals throughout 24 hours. Average daily milk yield was significantly ($p<0.001$) increased by yeast culture (YC) supplementation. The highest milk yield 10.84±1.17kg/day was recorded for cows fed with 40g YC. Cows on 20 g YC ration produced higher milk fat 3.77±0.84% ($P<0.05$). Cows on 40 g yeast culture ration produced higher milk protein (3.43±0.04%). Total milk solid not fat (SNF) content was higher ($P<0.05$) for animals fed with 20 g yeast culture ration. Daily feed intake was significantly ($P<0.001$) different among groups, highest mean daily feed intake of 38.74±3.36 kg/day was found in group C. Economically ration having 40 g YC produce 145.04 liter more milk, worth (145.04 X 70 = Rs.10152.8/-) than control group, while extra cost of yeast culture was Rs.4116/-, So, result in net profit of Rs:6036.8/- during 7 week period. It is concluded that milk yield, milk fat, Protein, SNF and feed intake were increased with supplementation of high level of YC in the Achai cattle ration. Higher proportion of 40g YC has shown the best efficiency of production as compare to other rations.

Keywords: Achai cattle, Feed intake, Milk yield, Milk composition, Yeast culture.

AP-077

STUDY ON GROWTH PARAMETERS AND TRANSMISSION OF GENETIC WORTH IN LOCAL RABBITS

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ABSTRACT

Growth traits and genetic worth of different crosses of local rabbits of Khyber Pakhtunkhwa Province were studied. A total of 48 breeding rabbits (40 does and 8 bucks) were divided into four groups on the basis of color i.e.; white, black & white, brown and black were studied in the Rabbitory unit of the University of Agriculture Peshawar. General Linear model (GLM) was used to study the effect of class variables on growth parameters. Litter size was found to be 4.49±1.15. Average weaning weight and body weight gain was 0.449±0.04 and 0.615±0.15g, respectively. Mean heart girth and body length was found to be 15.33±2.21 and 15.74±2.09, respectively. Dam and sire significantly ($P < 0.0001$) affected litter size, weaning weight, body weight gain, heart girth, and body length. Also the time interval significantly ($P < 0.0001$) affected body weight gain, heart girth, and body length. Perfect positive and significant correlation was found between body weight gain and heart girth (0.93, $P < 0.0001$). Similarly high positive correlation (0.90) was observed between body weight gain and body length. Heritability estimate (h2) for weaning weight and body weight gain was 0.94 and 0.14, respectively, while (h2) for heart girth and body length 0.15 and 0.08, respectively. It was concluded from the present study that class variable had significantly and linearly effected weaning weight, body weight gain and other morphometric characteristics. Weaning weights had the highest genetic worth indicating it as a candidate trait for selection in local rabbits. Relationship between Heart girth and body weight is much stronger and may be used in selective breeding. BCA's were proved to be a better tool for improvement in production traits of rabbits.

Keywords: Rabbits, linear body measurements, body weight, correlation, heritability.

AP-078

IMPACT OF GRADED LEVELS OF INOCULANT ON MICROBIOLOGICAL AND NUTRITIONAL QUALITY OF CORN SILAGE

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ABSTRACT:

Ensiling is, preservation of green fodder under anaerobic conditions for the homogenous and uninterrupted supply of feed to dairy animals. Silage additives (i.e. inoculants, acid) are being in practice to use. The microbial inoculants in silage aids to increase rate of fermentation, and substantiate the efficiency of the normal fermentation process. Present study was designed to evaluate the effects ofinoculum concentration on microbial growth, safety and nutritional quality of corn silage. Fresh corn fodder was chopped and ensiled with an inoculum consists of *Lactobacillus plantarum* IFA 96 (DSM 19456), *Enterococcus faecium* B1034 (DSM3530), *Lactobacillus brevis* IFA 92 (D5119456) mix culture was added at rate of 2, 4 and 6 gton-1. The silage samples were analysed for nutrients composition, fermentation end-products and microbial population 7th and 45th day.For nutritional profile, standard AOAC methods were followed. Data related to microbiology and chemical compositions of the silage were subjected to ANOVA for analysis of variance and Principal factor analysis was applied by using Pearson correlation (n) method at significance level of 0.05. Results of present study revealed that 4 gton-1 microbial inoculant concentration have comparative in the corn silages have significant impact on silage nutritive values, pH, dry matter and organic matter contents, while significantly decrease the fiber contents.This could be related to the unique combination of epiphytic and inoculant microbiota. The total bacterial and yeasts counts were significantly ($p<0.05$) increased with increase in the concentration of inoculant while Lactobacillus count was higher in 4gton-1.This concentration has significant ($p<0.05$) improved impact on silage quality pH, nutritive values such as protein, energies and dry matter contents, while significantly ($p<0.05$) decrease the fibre contents. Furthermore, at 4 gton-1 level, Bacillus sp. was dominant while no fungus or listeria growth was observed.

Keywords: Corn, Silage, Inoculant, Composition, Quality**.**

BRM-079

INVESTIGATING DISINFECTION BY-PRODUCTS FORMATION POTENTIAL OF CHLORINE AND CHLORAMINE IN DRINKING WATER

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ABSTRACT:

Owing to increased health concerns regarding regulated trihalomethanes (THMs) formation in chlorinated water, a switch from chlorination to chloramination has resulted in increased formation of nitrogenous DBPs, notably N-nitrosodimethylamine (NDMA), while reducing THMs concentration. The present study compares the potential of chlorine and chloramines to form disinfection by-products (DBPs) such as chloroform, Iodoform and NDMA in treated drinking water. 1 and 2 mg/L doses were tested at various time intervals against each disinfectant. Under particular experimental conditions, DBPs production varied as a function of the disinfectant type, dose and contact time. However, dose was found to be the most significant factor ($p<0.05$) in determining DBPs formation. The quantification results for THMs revealed that chloroform was the predominant specie in all post-chlorinated water samples, however, 88% samples surpassed USEPA limit of 0.07 mg/L. Whereas, Iodoform speciation was less favourable. NDMA was predominant in chloraminated samples. The present study may highlight and draw attention towards the emerging DBPs in drinking water as well as towards the appropriate disinfection strategies within the distribution networks to ensure safe supply of water to consumer's tap.

Keywords: disinfection by-products, NDMA, trihalomethanes, water and health

AP-080

EFFECT OF REPLACEMENT OF MAIZE FODDER WITH MAIZE SILAGE IN TOTAL MIXED RATION ON NUTRIENT INTAKE, DIGESTIBILITY AND PRODUCTION PERFORMANCE OF EARLY LACTATING NILI-RAVI BUFFALOES

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ABSTRACT:

Sixteen early-lactating (40±10 days in milk), primiparous Nili-Ravi buffaloes with similar milk production were selected and randomly divided into 4 treatment groups with 4 animals in each group. Four iso-nitrogenous and iso-caloric experimental TMRs were formulated with 60:40 ratio of roughage to concentrates on DM basis. The roughage part (60%) of four TMRs comprising maize fodder (MF) and maize silage (MS) of different ratio. Treatment A had 60% maize fodder + 0.0% maize silage, Treatment B 40% maize fodder + 20% maize silage, treatment C 20% maize fodder + 40% maize silage and treatment D had 0.0% maize fodder + 60% maize silage on DM basis respectively. Whereas, concentrate was similar for all TMRs. Dry matter intake (DMI) significantly decreased with increasing addition level of maize silage in TMR. The highest DMI was recorded in group A (control, 17.99±0.06) followed by B (17.81±0.06), C (17.68±0.06) and D (16.22±0.07). However, a similar trend was also observed for CP, NDF and ADF intake in all. DM digestibility significantly higher in control (64.49±0.54) followed by B, C and lowest in group D (60.17±0.75) respectively. While crude protein (CP) digestibility was also exposed a significant trend amongst group A with B, C and D, but non-significant among group B, C and D. Furthermore a similar pattern for neutral detergent fiber (NDF) and acid detergent fiber (ADF) digestibility were perceived among the groups. Milk yield was significantly ($P<0.05$) different stand as 8.97±0.12, 8.61±0.09, 8.45±0.10and 8.31±0.07 respectively for group A, B, C and D. Similarly, milk composition of buffaloes fed on different TMR also linearly different among the groups. Milk fat % increasing with increasing silage inclusion in TMR the highest fat% was observed in group C and D (7.18±0.14 and 7.17±0.12) while lowest in A and B (6.76±0.10 and 6.76±0.11). Similarly solid not fat (SNF), protein, lactose and ash were also significantly ($P<0.05$) higher in silage based TMR as compare to fodder base.

Keywords: total mixed ration, Nili-Ravi buffaloes, roughage, concentrate, maize sialage, dry matter intake

MT-081

SOME TECHNOLOGICAL PROPERTIES OF MEAT PROTEIN

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ABSTRACT:

Proteins that the basis of many vital events such as being the building blocks of all animal and vegetable living cells, being many hormones and enzymes in the structure of proteins, regulating metabolism events, ensuring the transport of many substances in blood, using them in synthesis of some compounds in metabolism events, are food components have a very large physiological importance. Proteins are compounds formed by the combination of different amino acids and various numbers of amino acids, with amphoteric character and large molecular weights. There are many proteins that differ in terms of variety, quantity, chemical structure and quality in foods. Meat is mainly composed of water, protein and lipids, but also contains, in lower concentrations, minerals, carbohydrates, vitamins and other bioactive components and is the first choice source of animal protein for many consumers. Some physicochemical properties that proteins possess are effective in inducing the functional/technological properties of proteins and provide some desirable properties to the food. Properties such as hydration, dissolution, viscosity, gelation, structure (texturing), surface activity, dough formation, emulsifying, foaming, flavor binding are the functional / technological properties of proteins which play an important role in food technology. The important functional properties of meat proteins are water binding, solubility, viscosity, water retention, oil binding, gelation and emulsification, affecting the qualities and properties as sensory, textural and appearance of meat products. Meat proteins can be classified as myofibrils (dissolved in salt), sarcoplasmic (water soluble) and connective tissue (non-salt soluble) proteins. These groups of proteins have different basic characteristics and different effects on meat products. In this study, it is aimed to give information about meat protein, some technological properties of meat proteins and effects on meat products.

Key words: Protein, technological properties, water binding, solubility, emulsification

BRM-082

FROM DAIRY SCIENCE PARK TO 'ONE HEALTH' SECURITY: CHALLENGES & EXPECTATIONS FOR GOVERNMENT-ACADEMIA-INDUSTRY IN KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT:

Dairy Science Park (DSP) emerged in 2011 as a society at the Agriculture University Peshawar, Pakistan. The society is registered with the Provincial government of KP and is in accordance with SDG Action 9671 of the UN. The DSP mission is to Support the people of KPK, FATA and Northern Areas of Pakistan through entrepreneurship for Youth, provision and export of hygienic food in addition to ensuring biosafety and biosecurity in the regions.DSP strives for one health security through leadership and guidance on policies & practices which impact biosafety and biosecurity in clinical, diagnostic & research labs at provincial level. It focuses on the environment, live stocks and the human capital and strongly advocates for a trust-based relationship between government, academia and industry. The interrelation between government, academia and industry provides an environment where developmental programs can flourish. A vibrant industry holds real promise for significant economic and social benefits and to fulfill these promises support of the academia is required. The academia should emphasize on the academic and scientific quality of the programs for innovations and competitiveness required by industry. The government with political will has to extend continuous support and to frame and implement policies for keeping the triangular relation interdependent. In this talk efforts are made to describe DSP journey from its emergence to this day highlighting its mission, and achievements since 2011. The systematic approach towards 'one health' security is focused. Challenges and expectation for government, academia and industry in Khyber Pakhtunkhwa province, Pakistan are discussed. Strategies for close links and cooperation between public and private sector have been suggested.

Keywords: Dairy Science Park (DSP); society; KP; SDG Action 9671; FATA; entrepreneurship; hygienic foodl biosafety; biosecurity; academia-industry Linkages.

DT-083

INDOOR POSITIONING AND NAVIGATION USING BEACONS TECHNOLOGY

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ABSTRACT:

This paper presents the use of Beacons Technology to navigate inside a building and helps in getting the desired location in that specific area. Beacons wirelessly transmit information within a specific range and can trigger an action on a nearby wireless device capable of communicating with Bluetooth. It can be considered as a substitute of GPS, working indoor, on the principle of Bluetooth low energy (BLE). The range of Bluetooth signals is 70 meters. BLE has advantages such as low power consumption, low cost and wide signal range. However, the beacon performance is not good in terms of indoor positioning accuracy because of some factors including noise, motion, and fading, all of which are the characteristics of a Bluetooth signal. Therefore, it is necessary to improve the accuracy of beacon devices. On average, the measurement error can be 20-30% of the actual distance. Hence, different solutions proposed to the increasing accuracy of beacon devices are analyzed in the paper by different methods. For increasing battery life, Cota Technology may be applied to charge the device wirelessly; once it is paired with the Cota transmitter. Apart from research work, the implementation part of using beacon devices with a cell phone for positioning and navigation was demonstrated in this study.

Beacon devices link the physical world to virtual world. A factory can be managed the way we manage the virtual world of websites. In countries like Pakistan, China and India, food spoilage and wastage is a major problem in food value chain. BLE Temp & Humidity sensor prevents food spoilage and enables tracking of food. FoodBeacon aims to fix the problem of spoilage of food by measuring humidity and temperature of the items. Beacons will be soon able to apply the full power of cloud services to the manufacturing process.

Keywords: Beacons technology, navigation, Bluetooth low energy, accuracy, battery life, food spoilage, food value chain, manufacturing process.

ANTIMICROBIAL PATTERN COMBINED ACTION EFFECT BASED TOOTHPASTE AND PLANT EXTRACT ON ORAL ISOLATES

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ABSTRACT:

Dental caries, a highly prevalent oral disease, is primarily caused by pathogenic bacteria infection. Herein, we investigated the antimicrobial susceptibility of medicinal plants including black pepper, black cumin, cinnamon, cardamom on toothpaste against oral isolates for healthcare improvement was studied. Different oral isolates from 50 selected individuals aged 3 to 60 years were obtained from both gender, and a total of 59 bacterial and yeast isolates were collected, purified, and tested against four different commercial medicinal plants extracts for antimicrobial susceptibility profile. A total of 20 toothpastes were purchased, and the combined action of the medicinal plants with toothpaste was studied against oral isolates. We found a higher bacterial population was in the age group of 3–40 years than other two groups, with approximately 44%. In addition, the combined action of acetone plant extracts (alone) against oral isolates showed increasing effect profile up to 61.02% when combination A (Ci/N) was added. Also, we found the combined action of plant extracts with toothpaste improved the antimicrobial susceptibility up to 90% in case of combination B.

Keywords: antimicrobial pattern, pathogenic bacteria, toothpaste, black cumin, cinnamon, cardamom

AP-085

DETERMINATION OF BREEDING OBJECTIVES AND ECONOMIC WEIGHTS IN ZANDI SHEEP REARED AT SEMI-INTENSIVE REARING SYSTEM OF QOM PROVINCE IN IRAN

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ABSTRACT:

To determine the breeding objective and relative economic values, 5 herds of Zandi sheep including 1843 heads of breeding ewes from different parts of Qom province were studied. In each herd, some production, reproduction, management and economic parameters were recorded for annual cycle from August 2011 to August 2012. To estimate the absolute economic weights, the level of the trait was increased by 1% of its mean value and 1 unit while the mean of other traits were constant, and the amount of change in the profit of system was considered as the economic weight. The relative economic weight for each trait, was calculated by dividing the it's absolute economic weight by sum of the absolute economic weight of all traits. Results indicated that the feeding cost represented about 72.41% of total annual costs, and the animal live weight represented about 97.55% of total annual income of studied herds. The mean annual profit was 37.14 $ per Zandi ewe in the semi-intensive system. The results revealed that the live weight of animals, the conception rate of ewes and the survival rate of lambs were the most important traits in all economic value estimation scenarios (maximum profit, income/costs and costs/income ratio), respectively.

Keywords: Breeding Objective, Economic Weight, Qom province, Zandi Sheep

AP-086

BIOFERTILIZERS FOR SUSTAINABLE AGRICULTURE AND FOOD SECURITY IN PAKISTAN

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ABSTRACT:

Soils of Pakistan are deficient in organic matter and essential plant food nutrients such as nitrogen, phosphorus, potassium and some micronutrients. Consequently crop yields are heavily dependent on use of external sources of nutrients mostly in the form of chemical fertilizers and to some extent on organic fertilizers. Unfortunately chemical fertilizers are highly expensive and inefficient as only small part of fertilizer is utilized by crop plants and the remaining is lose to the atmosphere or ground water. Alternatively biofertilizers are cheap and sustainable source of nutrients for economical crop production. Moreover, biofertilizers are environmental friendly compared with chemical fertilizers. A number of biofertilizers have been developed and used throughout Pakistan. Among biofertilizers, rhizomium based biofertilizeris most widely known and researched. Other biofertilizers which contain one or more of the microorganisms that help in biological N_2 fixation, availability and uptake of nutrients through phosphate solubilization,increased absorption, stimulation of plant growth (hormones), and help in rapid decomposition of organic residues are also produced and being used. Despite more beneficial and economical, the use of biofertilizers in the country is not widespread compared with chemical fertilizers. This paper highlights the benefits, constraints and future prospects of biofertilizersfor sustainable crop production in Pakistan.

Keywords: biofertilizers, micronutrients, crop yield, chemical fertilizers

PH-087

CRYPTOSPORIDIUM: AN EMERGING ZOONOSISIN SOUTHERN KHYBER PAKHTUNKHWA (KPK),PAKISTAN

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ABSTRACT:

Zoonotic cryptosporidium is a major cause of diarrhea both in developing and developed countries causing millions of deaths each year. This study was designed to estimate the zoonotic potential of Cryptosporidium in three districts of Khyber Pakhtunkhwa (KPK), i.e. Bannu, LakkiMarwat and Kohat.For this purpose 360 stool samples were collected from the District Head quarter Hospitals of all the three districts and were screened through microscopy. Results yielded an overall prevalence of 11.11%, withsignificant difference ($P<0.05$) among different study areas. Prevalence was highest in district Bannu(11.66%), followed by district Lakki Marwat and Kohat with 10% in each district. Statistical analysis revealed significant difference ($P<0.05$) among children of different age groups with highest diseaseprevalence in children of less than 5 years of age (21.40%) and lowest in children of 11-15 years of age(15.99%). Cryptosporidium was significantly higher ($P<0.05$) in areas having livestock animal contact and persistent diarrhea, highlighting its zoonotic potential from livestock animals to human beingsin the study area. This is first study addressing one of the main cause of neonatal mortality in the Southern KPK and its zoonotic potential.

Keywords: cryptosporidium, Southern KPK, zoonotic potential.

AP-088

IMPACTS OF USING IMPROVED SEED OF BERSEEM CLOVER (*TRIFOLIUM ALEXANDRINUM* L.) ON FORAGE QUALITY, YIELDS AND NET INCOME OF SMALL HOLDER DAIRY FARMERS

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ABSTRACT:

A field study was conducted with smallholder dairy farmers of Kasur and Okara districts of Punjab, Pakistan during winter season 2012-2014 to determine the effects of using improved variety seed against conventional seeds on forage quality, dry matter (DM) and seed yields of annual Berseem clover (*Trifolium alexandrinum* L.). Farmer participatory research approach was used for on-farm varietal selection and evaluation. Seed rate of 20kg/ha was broadcasted in standing water as farmer's standard sowing method, while all the other agronomic practices were kept constant except harvesting time across all sites. Three different seed sources of Berseem clover were used for this purpose; comprised of farmer own-saved seed (FS), market seed (MS) and the research station seed (RS). Two forage cuts were taken from each treatment plot after 65 and 110 days after sowing (DAS) and the subsequent forage cuts then left to flower after 110, 150, 180 and 210 DAS for seed production as Treatment one (T1), Treatment two (T2), Treatment three (T3) and Treatment four (T4), respectively. Harvesting time of 150 DAS (T2) with three forage cuts produced excellent forage and seed yields per hectare of all seed sources across all research sites. The research station seed at all research sites produced significantly higher yields of DM (6.59 t/ha) and seed (420 kg/ha) under the agro-climatic conditions of Kasur and Okara districts. Moreover, improved variety seed produced high quality forage having crude protein (26.8%), dry matter digestibility (68.3%) and metabolisable energy (14.1%). The study demonstrates that small-holder farmers can earn significant net income of PKR. 221, 688 Rs/ha (3,079A$/ha) from commercial forage seed production provided that the germplasm is of high quality.

Keywords: Berseem clover (*trifolium Alexandrinum* L.), forage quality, small holder dairy farmers

AH-089

DIAGNOSIS OF LATENT BACTERIAL INFECTIONS THROUGH ACUTE PHASE PROTEINS (APPs) IN BOVINES

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ABSTRACT:

Diseases those are transmitted from animals to humans are known as zoonotic diseases. Brucellosis and tuberculosis are important zoonotic diseases. Brucellosis is a disease, which causes severe economic losses due to late term abortion, weak and stillborn calves, the causative agent of the infection is a gram negative bacterium of the genus Brucella. Tuberculosis is another serious problem in bovines. It is mainly caused by Mycobacterium bovis. Both have a very long incubation period due to intracellular nature of the organisms and hence difficult to diagnose at early stage. Now-a days acute pahse proteins (APPs) considered to be an important tool for diagnosis of such diseases. The objective of the present study was to investigate the role of APPs in disease diagnosis. Serum antibodies against Brucella were detected by Rose Bengal Plate Test and for tuberculosis by Enzyme-linked immunosorbent assay (ELISA). The serum amyloid A (SAA) and heptoglobin (Hp) were measured by a solid phase sandwich ELISA in both brucellosis and tuberculosis positive animals. Equal numbers of apparently healthy animals declared negative on the basis of screening tests were also subjected to these acute phase proteins analysis. The results of the present study indicated that positive animals (both for brucellosis and tuberculosis) have a markedly higher concentration of SAA and Hp as compared to healthy animals. Hence, it has been concluded from this study that these acute phase proteins can be used to diagnose these two diseases at very early stage.

Keywords: Bovines, brucellosis, tuberculosis, APPs, Diagnosis

AP-090

ANIMAL BASED ORGANIC CARBON SOURCES ENHANCE CROP PRODUCTIVITY AND SOIL SUSTAINABILITY: A GOOD STRATEGY TO COMBAT FOOD SECURITY ISSUE IN DEVELOPING COUNTRIES

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ABSTRACT:

The 4‰-initiative aims to improve the soil organic carbon through better agricultural practices which are economically and environmentally friendly. Incorporation of soil organic carbon in the soils increases: (1) resistance of soils to erosion, (2) soil water retention, (3) soil fertility and (4) soil biodiversity. Stable and productive soils must have sufficient amount of soil organic carbon to cope with the negative effects of climate change. Under arid and semiarid areas in Northwest Pakistan the low crop productivity is the major cause of food insecurity. Low crop productivity in the arid and semiarid regions is attributed to (1) low soil organic carbon, and (2) low soil fertility. The integrated use of organic carbon sources especially animal based manures (poultry, sheep, cattle) incorporation in the soil along with chemical fertilizers (Nitrogen, Phosphorus, Potassium) and bio-fertilizers (fungi, bacteria) application increases grain and fodder yield per unit area of major field crops and so smallholder's income. We investigated the new organic carbon sources [plant materials (onion, garlic, canola, fababean, peach residues etc. which are never tried before) with comparison to animal manures (sheep manure, poultry manure and cattle manure)] along with various combination of chemical fertilizers (nitrogen, phosphorus and potassium) with (+) and without (-) bio-fertilizers (beneficial microbes), and found that the yield of field crops (cereal, oilseed and pulses) and growers income increased significantly over control. The results further confirmed that incorporation of organic carbon sources especially animal manures in the soil not only increase the yield and quality of the current field crops but its residual effect also had positive impact on soil health and yield of the succeeding crops especially under cereal-cereal based cropping systems in the arid and semiarid climates. Moreover, the integrated nutrients management practices is not only important for sustainable soil management but also improve crop yield, seed and fodder quality and grower's income and is a key to combat the food security problems in developing countries.

Keywords: food security, organic carbon sources, poultry manure, cattle manure, sheep manure, plant residues, biofertilizers, cereal based cropping system, climate change

MT-091

EFFECTS OF OLIVE LEAVES ON SHELF LIFE OF BEEF PATTIES

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ABSTRACT:

Several additives are used to improve storage stability and quality of the meatballs. Nowadays demand for products made from natural additives has increased due to the health problems caused by artificial additives. In this study, the antioxidant effect of olive leaves was investigated in meatballsduring refrigerated storage for 9 days. Dried and ground olive leaves was incorporated into meatball formulation at 0.5%, 1%, 1.5% and 2% concentrations and compared with control (without any antioxidant and olive leaves). pH values of samples ranged from 4.88 to 5.92. 1.5% and 2% concentrations of olive leaves significantly (P<0,01) retarded lipid oxidation in meatballs to muchgreater extent than control, concentration of 0.5% and 1% samples. Olive leaves with 2% had the lowest TBA values during storage. The addition of 1% and 2% of olive leaves had higher antioxidant activity (DPPH) than the other groups.While b*(stating yellowness)values increased, L*(refers to luminosity) and a*(stating redness)valuesdecreased with increasing concentration of olive leaves. Texture profile analyses (hardness, adhesiveness, springiness, cohesiveness, gumminess, chewiness and resilience) of meatballs were determined. The 2% concentration of olive leaves had the lowest hardness value.

Keywords: olive leaves, beef patties meat balls, additives, antioxidant, texture profile

AH-092

TWO NOVEL SNPS IN *STAT3* GENE ARE ASSOCIATED WITH MASTITIS SUSCEPTIBILITY IN DAIRY CATTLE

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ABSTRACT:

Mastitis is the inflammation of udder tissues of dairy animals characterized by physical, chemical and pathological changes in the milk and mammary gland. Somatic cell count (SCC) and somatic cell score (SCS)are useful indicators of udder healthand has highly positive genetic correlation (rg>0.7) with clinical mastitis. The effects of single nucleotide polymorphisms (SNPs) in the 2Kb promoter region of STAT3gene were investigated on mastitis indicator traits in a population of 200 dairy cattle. Two novel SNPs were found in the promoter of STAT3 gene by sequencing. Statistical model was applied by general linear model procedure of SAS considering the effects of SNPs, parity, herd, season and year of calving. Genotype and allele frequencies of the two SNPs were in Hardy–Weinberg Equilibrium (P>0.05)in the population. The two SNPswerehighly significantly associated with SCC and SCS (P<0.01).Genetic effect of the combination of the two SNPs was also significant on SCC and SCS (P<0.05). The results infer that STAT3 gene can be auseful candidate gene and the identified SNPs could be potential genetic markers against mastitis development in dairy cattle.

Keywords: STAT3 gene, single nucleotide polymorphism, mastitis resistance

PH-093

OCCURANCE AND CAUSES OF INSOMNIA IN YOUTH OF BAHAWALPUR DIVISION OF PAKISTAN

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ABSTRACT:

Insomnia is a globally occurring sleep disorder, affecting especially the youth and more than30 % of the adults complain to have at least few of the symptoms of sleeplessness. The objective of this study was to highlight the occurrences and basic causes of insomnia in both male and female youth of Bahawalpur (Pakistan). This survey base study was conducted by random circulation of specifically designed questionnaires among a sample size of 500 individuals (250 of each gender) having age in between 16-25 years. The questionnaires contained various questions regarding the occurrences, the types and fourteen basic causes of insomnia, which were formatted in self explanatory mode. SPSS was used to analyze the data obtained after taking back of questionnaires from individuals. The results indicated that the occurrences and wariness of insomnia were quite high in males (49.2%) as compared to females (34.19%). Similarly, transient insomnia was the principal types of insomnia in both males (63.10%) and females (78.70%). However, stress/anxiety (65.6%) was found to be the leading cause of sleeplessness while excessive use of mobile/internet, uncomfortable sleep environment and unpleasant noise affected above 40% of youth. Sleeplessness in youth warrants social and clinical attention and future research should need to be conducted to explore and resolve sleep problems in youth.

Keywords: Insomnia, Transient insomnia, Sleeplessness, Sleep disorder

AP-094

THE EFFECT OF BEDDING USAGE ON LYING BEHAVIOUR ON DAIRY COW

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ABSTRACT:

The purpose of the present study was to investigate the effect of cow beds on their lying behavior. In the experiment, lactating dairy cows were divided into 2 groups with bedding and straw. Treatments were identical in these experiments which lasted 12 weeks and dairy cows were fed total mixed ration containing corn silage, alfalfa, wheat straw and concentrate (18% crude protein and 2650 kcal/kg metabolizable energy). Straw usage in the straw-bedded resting area was 8-13 kg/cow/day. A bedded resting area size was 4 m2 per head for milking cows. Behaviours of each cow was registered every 15 min recording the frequency of eating, drinking, ruminating, standing, resting and locomotion and others and registered by scan sampling in 15-min intervals. The bedding usage behavioural responses of dairy cows were compared with non-parametric behavioural data, analyzed through Chi-square using SPSS for Windows, release 10.01, based on the count and frequency for each observation times. Bedding groups resting behaviour were higher than the straw bedding groups. Step length reflecting cows' comfortability, was longer (better) on bedding when compared to concrete.

Keywords: bedding usage, lying behaviour, straw, total mixed ration, behavioural responses

AH-095

IN-VITRO CYTOTOXIC AND ANTIVIRAL ACTIVITIES OF EXTRACTS OF *EQUISETUM DEBILE* AGAINST *FOOT AND MOUTH DISEASE VIRUS*

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ABSTRACT:

Foot and Mouth Disease virus (FMDV) is positive sense single-stranded RNA virus (+ ss RNA virus) with a protein coat consisting of four capsid proteins. Proteases encoded by the virus are responsible for viral replication by causing cleavage of polypeptide into the functional proteins causes 10 of the 13 cleavages in *FMDV*, is dramatically affecting the health status of animals all around the world resulting in extensive economical losses in livestock sector. Equisetum debile; a tannin flavonoids glycosides-rich medicinal plant distributed throughout subcontinent, is traditionally used as food for animal and possesses anti-viral potential against different RNA viruses. In the current study, ethanolic, methanolic and aqueous extracts from the whole plant of Equisetum Debile (BnsiBooti) were evaluated for their cytotoxicity and anti-viral activities against FMDV by adopting MTT colorimetric assay and anti-viral assay using BHK 21 cell line. Ethanolic .methanolic and aqueous extract presented significantly better ($P<0.05$) anti-FMDV activities. On the contrary, aqueous extract showed remarkable anti-viral activity. At higher concentrations most of the plant extracts were found to be cytotoxic. All three extracts of *Equisetum Debile* was found to be least cytotoxic against BHK -21 cells. The data presented in the study could pave a way toward the discovery of novel anti-viral chemicals in the plants against FMDV and other viral diseases.

Keywords: In-Vitro**,** Cytotoxicity, Antiviral activity, *Equisetum Debile,* Foot and Mouth disease virus

AP-096

EVALUATION OF TWO DIFFERENT ESTROUS SYNCHRONIZATION PROTOCOLS IN ACHAI COWS

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ABSTRACT:

The current study was conducted to evaluate the efficiency of two different ovulation synchronization protocols in term of modulating the E2 and P4 concentrations during the protocols and its effect on fertility, estrus expression, timed Al conception and overall conception rates in Achai cows. Lactating animals (n=12) were classified into two groups of equal number; POP (treated with Presynch Ovsynch Protocol and timed artificial insemination) and MSS (treated with Modified 7 day Select Synch + CIDR Control Intravaginal drug release device and Timed AI protocol). Higher concentration of E2 (P= 0.007) and a decreased (P< 0.001) concentration of P4 was observed for MSS then POP group after last PGF2-α injection. Cows that had higher level of E2 (P= 0.005) and lower level (P= 0.032) of P4 concentrations at the time of estrus become pregnant. E2 concentrations varied significantly among pregnant and non pregnant Achai cows in the two studied protocols (P= 0.003). Highest concentration of E2 was observed for pregnant cows in POP group followed by again pregnant cows in MSS group. The P4 concentration of pregnant cows in MSS was lowest at the time of insemination followed by pregnant cows in POP group compare to the non pregnant cows in both the protocols (P= 0.026). The estrus induction percentage was higher in POP than MSS (33.33% & 16.16%; P= 0.032). Timed AI conception rate was higher in MSS than POP group (60% & 25%; P = 0.021). Overall pregnancy rate was higher in MSS than the POP (66.66% & 33.33; P=0.045). The final impression of the study was that MSS (treated with Modified 7 day Select Synch + CIDR and Timed AI protocol) group was almost 100% better than POP (treated with Presynch Ovsynch Protocol and timed artificial insemination) group for estrus synchronization and conception of Achai cows.

Keywords: Estrus, Estrogen, Progesterone, Timed AI, Conception rate

AP-097

TOTAL TRACT NUTRIENT RETENTION AND APPARENT METABOLIZABLE ENERGY OF DIFFERENT CEREALS AND THEIR VARIETIES BY QUAILS

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ABSTRACT:

Very little is known about the digestibility values of different cereal varieties in quails under our local climate. In this study we examined Apparent Metabolizable Energy (AME) and nutrient retention of wheat, maize, sorghum cultivars by quails. A total of 270 quail birds were grouped (n=3) as W, M, S, each with two sub-groups. Cereals were fed in mash form in known amount and fecal content were collected for four days in metabolic cages. Nutrient composition of grains and fecal samples were measured, digestibility coefficients and apparent metabolizable energy (AME) were determined. Nitrogen retention was higher in maize followed by wheat and sorghum. Sorghum varieties had higher phytate content (0.85% & 0.87%) compared to wheat (0.78 % and 0.80%) and corn (0.72 % & 0.71%). The digestibility coefficient of crude fat of both the varieties of maize was higher (0.761 & 0.759 respectively) followed by sorghum (0.734 & 0.707 respectively) and wheat varieties (0.671 & 0.653 respectively). Apparent metabolizable energy was significantly higher in maize with no difference between wheat and sorghum. Total and phytate phosphorus retention was higher for maize followed by sorghum and wheat. The maize cultivars were highly digestible compared to wheat and sorghum.

Keywords: Quails, digestibility, phytate, cereals

AH-098

POINT PREVALENCE OF GASTROINTESTINAL HELMINTHES IN CATTLE AND BUFFALO IN DISTRICT KASUR, PAKISTAN

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ABSTRACT:

The point prevalence of gastrointestinal helminthes in large ruminants was investigated in this study. Samples were randomly collected from 200 apparently healthy animals (n = 100 cattle; n =100 buffalo) and examined microscopically. Results showed that buffalo were higher (37%) infected with helminthes than cattle (24%). The parasites wise prevalenet in cattle was recorded as Toxocara 29.16%, Haemonchus 12.5%, Fasciola 4.1%, Strongyloids 12.5%, Trichostrongyloids 12.5%, Ostertagia species 8.33 % and mixed infections were 8.33%; buffaloes were infected with Toxocara 35.13 % , Haemonchus 16.21%,, Fasciola 5.40%, Strongyloids 13.51% , Trichostrongyloids 16.21%, Ostertagia species 10.81% and mixed infections was 8.11%. Female animals (31.72%) were more prone to infection than male onces (14.28%). The age wise prevalence for less than 6 month, 6-12 month, 1-2 years, 2-3 years and more than 3 years was 52.5%, 78.26%, 16%, 14.04% and 20%, respectively.

Keywords: Large ruminants, Gastro-intestinal helminthes, prevalence

AP-099

IMPACT OF GRADED LEVELS OF INOCULANT ON MICROBIOLOGICAL AND NUTRITIONAL QUALITY OF CORN SILAGE

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ABSTRACT:

Ensiling is preservation of green fodder under anaerobic conditions for the homogenous and uninterrupted supply of feed to dairy animals. Silage additives (i.e. inoculants, acid) are used to increase rate of fermentation, and substantiate the efficiency of the normal fermentation process. Present study was designed to evaluate the effects of an inoculum concentration on microbial growth, safety and nutritional quality of corn silage. Fresh corn fodder was chopped and ensiled with an inoculum consists of Lactobacillus plantarumIFA 96 (DSM 19456), Enterococcus faecium B1034 (DSM3530), Lactobacillus brevis IFA 92 (D5119456) mix culture was added at rate of 2, 4 and 6 g/ton-1. The silage samples were analysed for nutrients composition, fermentation end-products and microbial population 7th and 45th day. For nutritional profile, standard AOAC methods were followed. Data related to microbiology and chemical compositions of the silage were subjected to ANOVA for analysis of variance and Principal factor analysis was applied by using Pearson correlation (n) method at significance level of 0.05. Results of present study revealed that 4 gton-1 microbial inoculant concentrations in the corn silages have significant impact on silage nutritive values, pH, dry matter and organic matter contents, while significantly decreased the fiber contents. This could be related to the unique combination of epiphytic and inoculant microbiota. The total bacterial and yeasts counts were significantly ($p<0.05$) increased with increase in the concentration of inoculant while Lactobacillus count was higher in 4gton-1. This concentration has significant ($p<0.05$) improved impact on silage quality pH, nutritive values such as protein, energies and dry matter contents, while significantly ($p<0.05$) decrease the fibre contents. Furthermore, at 4 gton-1 level, Bacillus sp. was dominant while no fungus or listeria growth was observed.

Keywords: Corn, Silage, Inoculant, Composition, Quality

AP-100

EFFECT OF SACCHAROMYCES CEREVISIAE INCORPORATION AS PARTIAL FOR REPLACEMENT FOR SOYBEAN MEAL ON OVERALL PERFORMANCE OF BROILERS AT FINISHER PHASE

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ABSTRACT:

A trial was conducted in broilers during finisher phase to observe the effect of low level of *Saccharomyces Cerevisiae* incorporation as partial replacement for soybean meal. Four type of feed were offered based on 0, 5, 10 and 15% replacement of soybean meal with SC, named as SC-0, SC-05, SC-10 and SC-15 respectively. Growth performance, carcass traits, economics, hematology, immunity and intestinal histo-morphology were under observations. The livability and mortality was significantly affected ($P<0.05$) and better performance was observed with increasing level of SC incorporation during finisher phase. The carcass traits were not significantly affected ($P<0.05$) except liver which might be due reduction of toxins load showing positive impact. The economics was significantly affected by ($P<0.05$) by SC incorporation and increase in gross return and profit over feed cost was noted with increasing level of SC. Likewise antibody titer against ND was also parallel with increasing level of SC incorporation. Hematology was not significantly affected ($P>0.05$) by SC incorporation however, numerical variation shown positive impact. The intestinal hist-morphology was not significantly affected ($P>0.05$) and validate successful incorporation of SC. Significantly improved ($P<0.05$) growth performance, economics and immunity while numerically improved in remaining parameters makes it recommendable for mass level in conclusion to be use in broilers industry during finisher phase.

Keywords: *Saccharomyces cerevisiae,* soybean meal, finisher phase, performance, economics

AP-101

THE SIGNIFICANCE OF SELENIUM, COBALT AND MAGNESIUM, AND THE EFFECTS OF ITS DEFICIENCY IN ANIMAL HEALTH

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ABSTRACT:

Microelements such as selenium and cobalt and macroelement as magnesium are indispensable nutrients for preserving major physiological functions. By their adequate use, the different diseases are prevented, while at the same time they have a positive effect on fertility and resistance. In the recent study, the better biological availability of selenium by ruminants is approximately 0.1 to 0.3 ppm. The metabolic role of selenium is, as a component of the enzyme glutathione-peroxidase. The initial deficiency of dietary selenium in cattle is recognized as the cause of "White Muscle Disease" in calves, damaging to cell membrane and tissue membranes, increased incidence of mastitis and high incidence of infertility. Blind staggers or alkali disease is the most common problem associated with selenium toxicity. Cobalt (Co) is requiring less than 1 ppm and an essential component in ruminant diets for the synthesis of vitamin B12. Ruminal synthesis of B12 is dramatically increased within hours of cobalt supplementation of a deficient diet. Co deficiency leads to anemia, fatty liver, increased mortality of offspring shortly after birth, increased susceptibility to infectious agents and infertility. Co supplementation above that required by the animal, increase the volatile fatty acid concentrations in the rumen fluid leads to improve the rate of fiber digestion. Magnesium (Mg) is a macromineral, plays an important role in maintaining the constant physical and chemical properties of cells, regulates the calcium and potassium cytosol flow which have role in muscle and cardiac tissue integrity, transfer of nerve impulses and muscle contraction and modifying the enzyme activity by concentrating the rumen fermentation. The main concentration of Mg in the body is in the skeleton, which contains 60-70% of the total. Hypomagnesium, grass tetany, winter tetany, or infantile tetany is a metabolic condition found in dairy cows at the start of lactation. Specific magnesium supplementation before and during risk periods can compensate for the fall in feed magnesium digestibility. In this review paper, an investigation has been recognized to inspect the effects of minerals supplement in single and/or joined form on animal health and their negative effects during deficiency in different species of animals.

Key words: Selenium, Cobalt, Magnesium, Animal health, Performance

FSE-102

A STUDY OF STRUCTURAL CHANGES IN LIVESTOCK ECONOMY OF PAKISTAN: AN EMPIRICAL ANALYSIS

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ABSTRACT:

Livestock sector is the largest sub sector of agriculture with a share of 58.55 percent in agricultural Gross Domestic Product (GDP) and 11.61 percent in Pakistan's GDP. Its average annual growth rate is over 3 percent. Keeping in view the potential and progress of this sector, it is considered imperative for achieving employment, income generation, food security and foreign exchange earnings. A comprehensive livestock policy based on a complete analysis of livestock population trends, number, composition, feed and fodder availability, milk yield, yield gaps and veterinary services is required to further promote this sector. The present study was conducted to provide the basic information needed for an effective livestock policy to promote livestock sector on sound footing to ensure its sustainability in Pakistan. The required data were collected from various published sources. Data were analyzed by using various measures like percentages, growth rates, Lorenz curve and regression analysis. Significant positive trends were observed in the population of buffaloes, cattle, sheep and goats. Some draft animals like horses, camels and mules have constant or even decreasing trends which is threat to these species. Milk and meat production also has satisfactory increasing trends, but this increase is due to increasing number of animals not of productivity. Considerable yield gaps were observed among small, medium and large livestock farmers. The primary causes for these yield gaps were poor breeds, shortage of feed, lack of health and artificial insemination facilities and improper markets with high marketing margins. Most productive breeds should be introduced along with modern husbandry practices to enhance their productivity. By overcoming these constraints, we can bring revolution in milk and meat production in Pakistan decreasing fodder area. Veterinary services are poor and insufficient in the country. Provision of efficient, cheap and easily available veterinary services is necessary to promote livestock sector in Pakistan.

Keywords: Livestock economy, GDP, employment, sustainablility, yield gaps, fodder area

AH-103

INCIDENCE RATE OF BLOOD PROTOZOANS IN DAIRY CATTLE IN KOHAT AND SURROUNDINGS

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ABSTRACT

The incidence rate of blood protozoans in dairy cattle was studied by screening 311 clinically suspected blood samples from kohat and surrounding areas by Geimsa's stained blood smear method. All the smears were observed under 100x magnification oil emersion lens of light microscope in duplicate. Among, 311 blood samples, 141 blood samples (45.33%) were found positive for blood protozoans. The remaining 170 samples (54.66%) were declared negative in the current study. Out of 141 positive samples, 70 samples were found positive for theilariosis (49.64%), 43 for anaplasmosis (30.49%) and 28 samples were found positive for babesiosis (19.85%). Keeping in view the findings of this study, it is concluded that the prevalence of haemoprotozoan diseases is of considerable importance in kohat region. It is recommended that blood protozoal diseases should be monitored on regular basis through random screening of blood samples at farms. The farmers are advised to practice acricidal spray on regular basis for controlling the vector ticks.

Keywords: Prevalence, Theilaria, Anaplasma, Babesia, Cattle, Kohat

AP-104

UPSHOT OF INHERITED FACTORS ON PROLIFIC AND REPRODUCTIVE RECITAL TRAITS OF KAJLI SHEEP IN PAKISTAN

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ABSTRACT:

The present investigation was to present genetic characteristics of Kajli sheep with respect to growth performance in context of genetic parameters. Reproduction performance data of 13715, lambing produced by 3342 ewes sired by 128 rams in Kajli sheep from 1994 to 2010 were used in the present study. Pedigree and performance data at Farm A, and Farm B were utilized estimating the breeding values of animals for various performance traits were analysed by best linear unbiased predication (BLUP) procedure and the DFREML set of computer programmes also generated to estimate the breeding values as a by-product. Phenotypic values of different performance traits were plotted against the year of birth to determine phenotypic trends. The year or season of birth usually influences the performance of animals due to variations in managemental, feeding, environmental conditions as well as selection of animals. Animals from both farms were fed with green fodder and the pregnant animals were fed with concentrates in last month of pregnancy. The heritability estimates of birth weight, weaning weight, yearling weight, pre weaning daily weight gain and greasy fleece weight in Kajli sheep were 0.05 ± 0.019, 0.069 ± 0.016, 0.015 ± 0.020, 0.056 ± 0.016 and 0.170 ± 0.060, respectively. Estimated breeding values (EBVs) of sire and dam of two farms regarding genetic traits showed significant variation. It is concluded that, gene frequency and heritability estimates can differ among populations and the role of environmental conditions, to which the flocks were exposed and low feeding plan may also be responsible for low heritability for various performance traits. The difference might be attributed to regular supplementation of ration to this flock. It is also evident that improvements in productivity of Kajli sheep may be achieved through better feeding and improved manage mental practices.

Keywords: Sheep, heritability, breeding values, performance, traits, Pakistan

ED-105

MONOPOLISTIC COMPETITION AND PRODUCT RIVALRY: AN ANALYSIS OF PROFIT MAXIMIZATION IN DAIRY FOOD PRODUCTS AND UTILIZATION OF INDIGENOUS RESOURCES IN KP AND FATA

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ABSTRACT

This paper analyzes the profit maximization based on selling dairy food products and market rivalry of reputable bakeries operating under monopolistic competition. Product rivalry is the competition among sellers of same product line to achieve certain objectives i.e. volume of sale and marketing mix (price, product, distribution , promotion) where as the most momentous and crucial is profit maximization which plays vital role in the efforts of two or more sellers acting independently to earn high returns by offering more market oriented product traits. The research is carried out in specific Bakeries of Peshawar, the northern city of Khyber Pakhtunkhwa province of Pakistan for Dairy Food Products only. The main objective of the research was to quantify the effects of monopolistic competition on the profit maximization rate of different bakeries that produces dairy products in Peshawar. Data was collected through questionnaire from most popular seven bakeries fully equipped, operational and producing almost the same dairy products. SPSS version 20 was used to analyze the collected data; further Q-Factor Analysis and Chi- square test was employed. A model of product rivalry and profit maximization was developed using data on monthly price, sales and profit. The results verified that monopolistic competition and product rivalry serves as a helping means of profit maximization in short run. The results further endorsed significant positive relationship ($p<.001$) between higher satisfaction level and regular purchases to raise profits. Since it is an established fact that though monopolistic competition and product rivalry firms can increase their profit yet simultaneously domino effect is better quality and low prices. Hence it is suggested that the policy makers should formulate policies enhancing product competition. The locally available livestock-based food products need to get linked to the quality control and marketing network of Dairy Science Park for generation of self employment for the youth, especially women folk and hygienic food production for local consumption and export.

Keywords: Profit Maximization, Monopolistic Competition, Dairy Food Products, Products Rivalry

AH-106

IMPACT OF CLIMATE CHANGE ON EPIDEMIOLOGY OF TICK-BORNE HAEMOPARASITES IN AZAKHELI BUFFALO IN DISTRICT SWAT, PAKISTAN

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ABSTRACT:

Haemoparasitic infections are among the most economically important large ruminant diseases in Pakistan. The current cross sectional survey was conducted to determine the impact of temporal changes on the epidemiology of haemoparasites in Azakheli (Indigenous local breed) buffalo in randomly selected villages of district Swat during 2014-15. Giemsa-stained blood smears were prepared from the sampled animals from January 2014 to January 2015 and were examined for the presence of tick borne haemoparasites (i.e. Anaplasmasp; Babesiabigemina; Borreliasp; Eperythrozoonsp; Theileriamutans, and Theileriavelifera). Total of 127 different age group animals were selected and followed for at least one year as the inclusion criteria for selection. Monthly and cumulative incidence was determined for different tick borne parasite species. Anaplasma specie was the most common parasite in buffalo with 100% incidence in young calves by the five months of age, and Theleria specie in adult Azakheli buffaloes of more than one year of age. The relative prevalence of all the parasites identified in during the study varied with the temporal changes in this region, as well as the actual infection rate. Seasonal trends in the incidence of the highly prevalence haemoparasites were evident. The highest incidence and cumulative prevalence was recorded in the months with higher temperature and humidity respectively, with elevated infection rate. It is envisaged that the current study results will stimulate future in depth research to determine epidemiology of haemoparasites in large ruminants by using more sensitive molecular techniques in the country and will help to design control strategies in future.

Keywords: Haemoparasites, Azakheli, Epidemiology, Temporal

FSE-107

SODIUM SILICATE SEED PRIMING LEADS TO ENHANCED ANTIOXIDATIVE PROTECTION OF WHEAT (*TRITICUMAESTIVUM L.*) SEEDLINGS UNDER WATER-DEFICIT STRESS

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ABSTRACT:

Sodium silicate is an anhydrous white powder of sodium metasilicate, commonly called as silicon. Silicon synchronized the crop growth and yield. Its application could improve the germination, growth, antioxidant enzymes activities, plant height, leaf area, dry mass and yield of crops and reduced lipid peroxidation during drought stress. That's why; the sodium silicate (SS) priming induced improvements in the water deficit tolerance especially in physico-biochemical parameters in wheat seedlings were investigated. Seed priming treatments used in the study were hydro priming (soaking of seeds in aerated distilled water for 8 hrs) and SS priming (soaking of seeds in an aerated solution of 20, 40 and 60 ppm Sodium silicate for 8 hrs).
Seed priming with sodium silicate (60mM) enhanced the peroxidase activity, total phenolics, protein contents and reducing sugars in leaves under osmotic stress while all concentrations improved these parameters under non-stress condition. Sodium silicate priming significantly decreased the catalase, protease, α-amylase and superoxide dismutase (SOD) activities; malondialdehyde (MDA) contents, non- reducing sugars and total sugars in leaves under non-stress and osmotic stress conditions. Leaf relative water content and cell membrane stability significantly improved after sodium silicate priming showing lesser osmotic stress induced injury to membranes in seedlings grown from primed seeds. In short, SS priming showed better improvement to water-deficit stress tolerance than hydropriming by enhancing antioxidants, leaf relative water content and cell membrane stability. We envision that the seed priming using sodium silicate may act to insulate the effects of different abiotic stresses (salt, water, heavy metals, light and temperature etc) on cereals like maize etc. We do recommend its application as plant growth regulator on different cereal crops growing under different levels of environmental stresses.
Keywords: sodium silicate seed priming, silicon, lipid peroxidation, peroxidase activity, abiotic stress

AH-108

DIETARY BUTTER INDUCES METABOLIC DISORDER IN RAT MODEL

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ABSTRACT:
High-fat diets (HFD) are associated with epidemics of various defects in metabolism. In the gastrointestinal tract, metabolic disturbances may be related to various persistent diseases like irritable bowel syndrome (IBS), inflammatory bowel disease (IBD), insulin resistance and eventually colorectal cancer (CRC). For this purpose, rats were fed with two high-fat diets: HFD 1 and HFD 2 i.e. 15% and 30% extra butter in a routine diet respectively. Results of physical parameters are of significance while as, the total oxidant status (TOS), lipid profile, growth hormone profile and histopathological evaluation were also performed. Results showed significance for physical parameters (body weight, defecation pH, and defecation rate) in comparison to the control group ($P<0.05$). Similarly, abdominal fat (% age), lipid profile and TOS were significantly higher while results of HDL were non-significant. Haematological results showed significantly higher WBCs in HFD treated groups whereas, thyroid hormones such as, T3 and T4, were non-significant ($P>0.05$).).Histopathological examination showed that there is sloughing in the epithelial lining and accumulation of fat droplets in enterocytes after ingestion of HFD as compared to control. Overall results suggest that high fat dieting leads towards fat deposition in enterocytes and increased abdominal fat, disturbed lipid profile as well as oxidative stress following metabolic syndrome. Fat droplets deposition in enterocytes and intestinal junction disruption in gut epithelium is following increased oxidative stress.

Keywords: Irritable bowel syndrome, histopathology, inflammatory bowel disease, oxidative stress

AH-109

CURRENT QUINOLONES SHOW SIGNIFICANT HYPOGLYCEMIC EFFECTS IN EUGLYCEMIC RABBITS

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ABSTRACT:

Fluoroquinolones (FQs) have high spectrum of activity against Gram negative bacteria as well as Gram positive bacteria. FQs are notorious for QT interval prolongation, hypersensitivity, photosensitivity and dysglycemia. As there are controversial reports about effects of quinolones on blood glucose levels, hence we conducted the study in euglycemic rabbits' model to find out its effects on blood glucose levels. Euglycemic rabbits were randomly divided into five treated groups including positive control group. FQs were administered orally on daily bases as per their recommended doses (mg/kg). Blood was collected from marginal ear vein on day 1 as baseline (before the start of therapy) and on day 7^{th} and day 14^{th} . Blood glucose level was monitored through glucometer. Plasma Insulin level was determined using ELISA Kit (radioimmunoassy). Pancreas of control and treated groups were excised and processed for Hematoxylin and eosin staining to confirm possible histological changes. One-way ANOVA followed by dunnett's test was used at 95% CI with a $p \leq 0.05$**.** In all the treated groups, blood glucose levels were significantly decreased, while insulin level significantly increased with P≤ 0.05. Ciprofloxacin, moxifloxacin, levofloxacin and gemifloxacin decreased blood glucose level by 15.40%, 29.46%, 23.93% and 26.46% respectively while insulin level increased 62.2%, 70.0%, 28.0% and 42.0% respectively in euglycemic rabbits. In positive control group "glibenclamide treated group" the blood glucose level significantly decreased 31.85% while insulin level increased by 81.12%. In normal control group, no significant changes were found in both insulin level and glucose level. Histological examination confirmed that the density and number of cells of pancreas were decreased as like that of glibenclamide treated group. The current quinolones "ciprofloxacin, moxifloxacin, levofloxacin and gemifloxacin" significantly reduced blood glucose level with increased plasma insulin level in euglycemic rabbits possibly through release of beta cell of pancreas.

Keywords: Blood glucose; Dysglycemia; Euglycemics; ciprofloxacin; moxifloxacin; levofloxacin; gemifloxacin; Insulin levels;ELISA

FSE-110

BENZIMIDAZOLE AND THIOBENZIMIDAZOLEINDUCED CHANGES IN GROWTH AND ANTIOXIDANT ATTRIBUTES OF OKRA GROWN UNDER CHROMIUM STRESS

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ABSTRACT:

It is known that growth of different plants has been reduced by heavy metals like Cr, Zn, and Hg etc. Chromium (Cr) stress has also been known to highly effect the growth of vegetables. The benzimidazole and thiobenzimidazole are also known as plant growth regulators because theycould increase the nutrients uptake and increase growth parametersin different plants.The present study aimed to evaluate the insulating effects of benzimidazole and thiobenzimidazole on growth of okra against Cr stress. The seed of okra were primed with 10 ppm sol of both compounds. In pot experiments, primed, hydro-primed and non-primed (control) okra seeds were grown under Cr stress (0.25 mM, 0.50 mM and 0.75 mM). After one week of germination, the Cr solution were added in pots to induce Cr stress. In hydro-primed plants toxicity of Cr reducedthe growth. In benzimidazole and thiobenzimidazole primed plants, the negative effects of Cr were well-encountered, resultantly growth increased significantly as compared to control. Okra plants were harvested and subsequently grinded in methanol and phosphate buffer. After grinding we studied morphological parameters (root length, root dry weight, root fresh weight, shoot length, shoot fresh weight, shoot dry weight and leaf area), pigment contents (chlorophyll a, chlorophyll b, total chlorophyll and carotenoids) and biochemical attributes(phenolics, flavonoids, total soluble sugars, total free amino acids, total soluble proteins and anthocyanin). There was a significant increase in root length, root fresh weight, shoot fresh weight, chlorophyll a, total chlorophyll, carotenoids, flavonoids and phenolics in plants under 0.25 mM Cr stree. The benzimidazoleandthiobenzimidazoleandwere able to counter Cr stress of 0.75 mM concentration as evident from significant increase in afore mentioned parameters. It has been concluded that benzimidazole and thiobenzimidazole could be helpful to insulate plants against Cr stress.

Keywords: benzimidazole, thiobenzimidazole, Chromium stress, okra seeds

FSE-111

BALOCHISTAN NARI MASTER AND ITS IMPORTANCE FOR THE FUTURE BEEF INDUSTRY OF PAKISTAN

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ABSTRACT:

The Bhagnari cattle of Balochistan, Pakistan are Zebu type and are well adapted to local conditions and over time have been selected for draught. The Bhagnari cattle, strong heavy breed, are well suited to slow but heavy agricultural work by tilling the hardest soils and pulling heavy loads. The breed accounts for about 28 percent (380,000 heads) of cattle population. The farmers of the area earn a greater part of their livelihood through cattle production of Bhagnari and non-descript breeds. Primarily these cattle have been used for draught purpose. There has however been no typical breed of cattle for meat production except the old and worn out cattle, no longer required for milk or draught purpose. In view of growing population and high cost mutton, the consumption trend to be shifting to beef eating. Similarly due to income elasticity, increasing trend of fast food and eating in hotels, demand for tender beef was seen to be on the high side. At Beef Production Research Center, Sibi, first Pakistani beef breed named as, "BALOCHISTAN NARI MASTER" has been evolved in late nineties. This new breed has a combination of improved and good characteristics like better birth weight, weaning weight, better fertility rate, weight gain in feed lot, better carcass quality, dressing percentage, feed conversion ratio besides resistance to hot weather and parasitic infestation as compared to indigenous Bhagnari. Achievement of the objectives towards evolution of "Balochistan Nari Master" as a unique breed having the beefy characteristics through successive cross breeding has successively been obtained and now the breed needs further propagation in the area. The department has been able to achieve a base population of about 500 heads of "BALOCHISTAN NARIMASTER" by now and intends to utilize/propagate it further in private sector for beef production.

Keywords: Balochistan Nari Master, Zebu, Bhagnari, Beef production, private sector

FSE-112

ROLE OF BIOTECHNOLOGY IN THE PROSPERITY AND FOOD SECURITY THROUGH SUSTAINABLE AGRICULTURAL AND ENVIRONMENT IN DEVELOPING WORLD

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ABSTRACT:

Biotechnology is a modern science that deals with the biological process through which technological innovation can be achieved and subjected to deliver goods and services for the benefit of human being. Biotechnology is making it possible for researchers and developers to deliver products that help farmers protect their crops and livestock; and improve the economy and environment while grow grains, develop dairy products that improve the quality of the food we eat. Biotechnology will enhance quality of life in many ways, while helping the environment by reducing our dependence on non-renewable resources. The most common reproductive biotechnologies include, semen processing, cryo-preservation, vitrification, sexing of sperm and embryos, artificial insemination, embryo transfer, in vitro fertilization, cloning, transgensis, juvenile in vitro embryo transfer, chimera production, multiple ovulation and embryo transfer, aspiration of oocytes from the live animals and zygote intra-fallopian tube transfer. In the developing world hence modern technologies have yet to play their due role in different areas of agriculture, medicine, dairy industry, environment and especially for food security. Nevertheless, the challenge has been, and will continue to be, for researchers to find ways of manipulating biotechnologies for improved production and food security. This will also provide great opportunity to network with colleagues worldwide to share knowledge and experience on teaching and research areas. However, a more widespread and competent use of the available techniques is required in order to gain benefit from their applications. Especially in the developing world, this future intra-disciplinary cooperation will also be needed among the industries, consumers and research institutes for food supply chain. Failure to achieve a high level of cooperation can potentially lead to a delay in biotechnologies application in development and will result in serious long lasting economic losses in food security through sustainable agricultural and environment in developing world.

Keywords: reproductive biotechnology, food security, food supply chain, sustainable agriculture

ED-113

ROLE OF WOMEN IN LIVESTOCK AND DAIRY DEVELOPMENT IN BALOCHISTAN, PAKISTAN

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ABSTRACT:

Livestock is a very important sector of economy of Balochistan. It is the main source of income and they involve their women and children in the rearing of livestock. Women take care of feeding the livestock, cleaning the abodes, and even in providing traditional cures from diseases. They are further involved in milking and milk processing, poultry, and egg selling. Women have a significant role in the development of livestock in Balochistan. Since livestock plays major part in economy, its role can be enlarged when women are allowed to participate commercially in this field. Hence, training and development may be the first drop of water towards agriculture base economy and the consequences will be positive in terms of prosperity of the people specially living in this province. Balochistan constitutes two significant belts in terms of cast of tribe, Baloch and Pashtoon belt. The Baloch belt, are more active and agile to part her share in handling the livestock herds. On the other hand, women who are residing in Pashtoon belt can only take part fewer activities of livestock, which is within the boundary walls of house. There is acute need to give them proper training regarding the livestock management. Interestingly, livestock business can easily be managed by small, young, old, at home and margin of profit is very high as compare to crop cultivation. More importantly, women can manage them indigenously at home as the do the other chores at home. Role which women play in livestock marketing is best addressed by improving their access to livestock development activities in general. Increasing women's involvement in livestock development activities could be encouraged by making training and activities directly available to women. This paper is an attempt to highlight the role of women especially focusing the present livestock production systems in Balochistan.

Keywords: livestock and dairy development Balochistan, Baloch and Pashtoon belt, livestock business, women's involvement in livestock

FSE-114

ENHANCING OUTPUT OF ANIMAL-ORIGIN PRODUCTS FOR ENSURING FOOD SECURITY IN PAKISTAN; A REVIEW ARTICLE

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ABSTRACT:

Animals are natural factories that convert the raw fibrous material that humans cannot consume into valuable edible products like milk, meat, eggs and other by-products like fat, manure, skins, hides, wool, hairs, bones, etc. Here we present the conclusion of research work conducted in recent past. The animal production operations provide 35% income to nearly 8 million rural families in Pakistan directly or indirectly. In country prospective, livestock contributed approximately 58.6 percent to the agriculture value added and 11.6 percent to the overall GDP during 2015-16. Gross value addition of livestock at constant cost factor of 2005-06 has increased from Rs. 1247 billion (2014-15) to Rs. 1292 billion (2015-16), showing an increase of 3.63 percent over the same period last year. There are about 42.8, 36.6, 29.8, 70.3, 1.0 & 1016 million heads cattle, buffalo, sheep, goat, camels and poultry, respectively in Pakistan (Pakistan Economic Survey 2015-16) that produced 54.328 million tons milk, 3.873 million tons meat, 15.886 million hides, 54.278 million skins, 45.1 thousand tons wool, 26.5 thousand tons hairs, 852.3 thousand tons bones, 271 thousand tons fat, 1207 thousand tons dung, 3940 thousand tons edible offal during 2015-16. To reduce the poverty and improve the live-hood of rural communities in Pakistan the livestock enterprise is one of the most important sectors that need improvement in productivity. Current production potential of milk (7-8 liters/day/animal) and beef (100-150 kg/carcass) can be doubled with proper inputs and adopting improved production technologies. There is also need to link the livestock value chain with exports to new markets abroad for higher rural community earnings and uplifting foreign exchange earnings in Pakistan.

Keywords: animal origin products, food security, edible products, livestock

PH-115

SEROPREVALENCE AND RISK FACTOR ANALYSIS OF HUMAN LEPTOSPIROSIS IN DISTINCT CLIMATIC REGIONS OF PAKISTAN

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ABSTRACT:

Leptospirosis is a worldwide emerging infectious disease of zoonotic importance and large epidemics and epizootics have been reported all over the globe. A cross sectional survey was conducted to estimate seroprevalence of human leptospirosis in climatically distinct regions of Pakistan and to identify risk factors associated with the disease. Blood samples from 360 humans were collected through convenient sampling, 120 from each study area. Serological testing was perfomed using ELISA (LEPTOSPIRA IgG, Kit MBS036135, Mybiosource Inc. San Diego CA, USA). Age, gender, marital and educational status, area of residence, occupation, exposure to animals, water recreational activities, usage of PPE, rodent control program and history of cut or wound were inquired by questionnaire based interviews. The results showed an overall prevalence of 40.83% (95% CI; 35.71-46.11). Statistical analysis showed significant ($P<0.05$) differences in leptospiral seroprevalence between the three geographic locations, being highest in a humid sub-tropical climatic region (50.83%; 95% CI; 41.55-60.07), followed by a semi-arid region (44.16%; 95% CI; 35.11-53.52) and lowest in a hot and dry region (27.50%; 95% CI; 19.75-36.40). Multivariable analysis revealed that age, gender, exposure to flooding water, source of water usage, disinfection measures of surroundings and history of cuts or wounds were significantly associated with the seropositivity of Leptospira. The present study is the first to evaluate the seroprevalence of human pathogenic Leptospira in different climatic regions of Pakistan. It highlighted the effect of climate and its changing patterns on prevalence of Leptospira in the region.

Keywords: seroprevalnce, leptospirosis, ELISA, hot and dry regions, prevalence

FSE-116

TOTAL FACTOR PRODUCTIVITY GROWTH OF LIVESTOCK SECTOR IN PAKISTAN: A TIME SERIES ANALYSIS

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ABSTRACT:

Livestock is the largest sub-sector among all others in agriculture, which contributes 58.55 percent in agriculture and 11.8 percent in total GDP of Pakistan during 2016-17. The present study calculated total factor productivity growth of livestock sector in Pakistan for the period 1971-2015. Output and input quantity data of major livestock outputs produced and main inputs used in production along with their prices were utilized in constructing output and input quantity index, respectively. The most often used index number approach; the Tornqvist-Theil was employed to calculate these indices. The study also estimated the contribution of TFP growth to output growth for livestock. Total factor productivity (TFP) of livestock has grown at an average annual rate of 1.25 percent during the study period. TFP growth was highest during 1990s (4.08 percent) and was lowest during 1970s (-2.5 percent). Output growth was estimated as maximum during the decade of 1980s and minimum during the first decade of 21st century as 5.91 and 0.68 percent, respectively. Average input growth was estimated to be 2.27 percent for the study period with maximum of 5.08 percent during decade of 1970s and minimum 0.27 percent during decade of 1990s. It has been found that TFP growth of livestock was an important deriving force in growth performance during the last 45 years. The analysis of different periods revealed that fluctuations in the total factor productivity growth of livestock were due to public interventions, climate change factors, technological breakthroughs and certain macroeconomic policies. Thus, need of the time is that input use be optimized and emphasis should be given to improve the total factor productivity of livestock by increasing the efficiency of resource use and better management. The government should deliver continuous support to livestock sector for sustainable TFP growth, in terms of new technologies and favourable macroeconomic policies.

Keywords: Total Factor Productivity, Livestock, macroeconomics

AH-117

HIGH PROTEIN DIET LOWERS BLOOD GLUCOSE LEVEL THROUGH REGENERATION OF PANCREATIC B CELLS IN DIABETIC RAT MODEL

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ABSTRACT:

Diabetes mellitus is considered to be one of the rapidly growing diseases worldwide. The number of patients suffering from diabetes is increasing along with associated complications as well as health care expenditure. In management and prevention of diabetes mellitus, medical nutrition therapy may act as a keystone. Current investigation is performed to investigate the effect of a high protein diet (Egg Albumin) on alloxan induced diabetic rat model. During experimental period physical parameters such as, body weight, rate and pH of defecation as well as blood glucose levels were measured after ingestion of higher concentration albumin as high protein diet. Biochemical parameters including lipid profile (total cholesterol, triglycerides, LDL and HDL), serum insulin, serum T4 and T3, TAC,HbA1c analysis and renal function tests showed significance. Histopathological results of the pancreas showed marked increase in number of β cells with high protein diet. Results of biochemical profile after statistical analysis revealed that in general high protein diet containing 45% egg albumin ameliorates oxidative stress in diabetic rats by improving lipid profile, blood glucose, insulin and renal function markers.

Keywords: Diabetes mellitus, oxidative stress, nutrition therapy, histopathology

AH-118

COMPARATIVE EFFICACY OF LOCAL AND PARENTAL ANTIBIOTICS FOR THE TREATMENT OF CLINICAL MASTITIS IN DAIRY BUFFALOES

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ABSTRACT:

A total of 30 lactating buffaloes were selected and divided into three groups i.e B1, B2, and B3 containing 10 buffaloes each from in and around Multan, Punjab, Pakistan. Animals in group B1 received treatment protocol-I = Tylosin (Inj.TINE-20TM, A & K Pharma, Pakistan) 10mg/kg for five days through I/M route while B2 animals received treatment protocol-II = Gentamycin 100mg (GentamastTM, Vetycare Pharma, Pakistan), Intramammary route and group B3 received treatment protocol-III = Tylosin (Inj.TINE-20TM, A & K Pharma, Pakistan) 10mg/kg for five days through I/M route in combination with Gentamycin 100mg(GentamastTM, Vetycare Pharma, Pakistan) through Intramammary route. Clinical cure rate in group B3 was significantly different from groups B2 and B1. A significant difference in clinical cure rate was found in all groups receiving three treatment regimes at day 28 post treatment. Clinical cure rate in group B3 (80.76%) was significantly different from groups B1 (72%) and B2 (24%). A significant difference in bacteriological cure rate was found in all groups receiving three treatment regimes. Bacteriological cure rate in group B3 (76.92%) was significantly different from groups B1 (64%) and B2 (16%). A significant difference in clinical cure rate was found in all groups receiving three treatment regimes. In short, use of combined antibiotic therapy through different routes is better single route therapy.

Keywords: Mastitis, antibiotic, treatment

FSE-119

NEED OF HALAAL CERTIFICATION FOR EDIBLES, BEVERAGES, MEDICINES, COSMETICS (AN OVERVIEW)

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ABSTRACT

Eating and drinking is an essential need of every living being, without which, it cannot survive. The same applies to human beings who need healthy nourishment in order to live and thrive. Apart from those who follow the divine religions, the yardstick of people in general, when it comes to food, is to only look at the apparent and external aspects thereof. They may do not have the slightest interest in whether or not that food will have an effect on their spiritual selves. On the contrary, Islam places much more emphasis on ensuring that whatever man consumes should be nourishing and wholesome for his spiritual self, Imaan, heart and soul, than what it places on ensuring that this nourishment should be physically safe for the internal and external needs of the body. The Shari'ah has referred to this as Halaal and Taahir (Tayyab). The above-mentioned command encompasses food, beverages, medicines, and cosmetics. For this very reason, Islam teaches us simplicity and contentment in terms of the external standards and quantities of all of the above-mentioned categories, while repudiating any form of compromise on their spiritual and internal – in other words, Halaal – standards. Halaal status of foods may be verified through nature of the animal to be slaughtered and the processing techniques and additives, which all must have been declared Halaal by the relevant scientific and Halaal certification authorities. Taahir may be considered as "hygienic" in scientific terms, meaning freedom from pathogenic microbes, and hazardous chemicals/ toxins. This status may be verified by analytical laboratories dealing with such techniques. Dairy Science Park has established panels of experts and partnership with the development and corporate organizations related to these disciplines. Any industrial food product meeting the Halaal and Taahir standard would be allowed for local consumption and export through proper documentation.

Keywords: Shari'ah, Halaal, Taahir, hygienic, toxins

PH-120

ANTHELMINTIC DRUGS IN THE DARK ERA OF ANTHELMINTIC RESISTANCE: REPORT FROM PAKISTAN

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ABSTRACT:

Profitable livestock farming faces the threat of infection with drug resistant populations of nematodes, which leads to increased economic losses. Timely diagnosis of resistance and use of most effective drug is a key to profitable farming. This study was conducted in three Tehsils of District Toba Tek Singh (Pakistan) namely Gojra, kamalia and Toba Tek Singh, to evaluate the prevalence of anthelmintic resistance in the buffalo and cattle calves by using a Feacal Egg Count Reduction Test. This method is recommended, by World Association for the Advancement of Veterinary Parasitology for the diagnosis of anthelmintic resistance. Three commonly used anthelmintics, ivermectin and benzimidazole, were used to detect the development of resistance in nematodes of buffalo and cattle calves. In Tehsil Toba Tek Singh farm #4 showed that percentage reduction in egg per gram (EPG) of faeces was less than 95% in ivermectin (94.74%) and in Tehsil Gojra farm #1 and farm #2 showed that % reduction in EPG of faeces was less than 95% in levamisole (94.74 and 94.44 respectively). This indicated the presence of ivermectin resistant nematodes or the substandard drugs administration to the treated animals. The rest of the farms showed suspected resistance with percentage reduction in EPG of more than 95% with a value of lower limit of 95% confidence interval less than 90%. Farm #4 of Tehsil Toba Tek Singh and Farm #1 and 2 of Tehsil Gojra showed a very slight resistance, suggesting an abrupt increase in the near future.

Keywords: Anthelmintic resistance; ivermectin; levamisole; benzimidazole

AP-121

USE OF MANNAN OLIGOSACCHARIDES IN BROILER DIETS: A REVIEW

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ABSTRACT:

Antibiotic resistance has led poultry nutritionists to find alternatives for antibacterial growth promoters in broilers. Among these substitutes, one is mannan oligosaccharides (MOS), a yeast cell wall derived prebiotic. MOS decreases the load of pathogenic bacteria through 1) binding bacterial type-1 fimbriae 2) increasing goblet cells which produce bactericidal mucin and 3) providing favourable environment for the growth of beneficial bacteria leading to competitive exclusion. Balance between pathogenic and beneficial bacteria causes increase in villus length and decrease in crypt depth which are biomarkers for gut morphological improvement. As structure is equal to function, improvement in intestinal morphology increases activity of digestive enzymes and ultimately improves digestion. Besides these, immunomodulatory effect of MOS activates macrophages of gut associated lymphoid tissues resulting in improvement in cellular, humoral and cutaneous immunity. MOS also increases production of butyric acid and decrease pH of intestine in broilers. Though these combined mechanisms, MOS improves growth rate and performance of broilers.

Keywords: mannan oligosaccharides; intestinal microflora; morphology;immunity; performance

SERO-PREVALENCE OF ECHINOCOCCOSIS (ECHINOCOCCUS GRANULOSUS) IN CAMEL POPULATION OF SELECTED ECOLOGICAL ZONE OF BALUCHISTAN, PAKISTAN

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ABSTRACT:

The present serological investigation was conducted in four camel populated, ecologically different zones in (Bharkhan, Musakheil, Lorallai and Zhob) of Baluchistan, Pakistan. To this end, 334 serum samples were tested for the presence of *Echinococcus (E.) granulosus* antibodies through antigen coated plates. The test results at a cut-off value of 1.25 revealed that 35.92% camels of selected study districts are seropositive for *E. granulosus*. The highest prevalence was recorded in District Musakheil (40%) followed by Zhob (37.03%), Lorallai (32.07%) and Bharkhan (28.57%) with no significant association (P=0.492) in different areas. Breed (Pahwal, Gaddai, Kohi), age (>10years, 5-10 years, <5 years) and gender (male, female) were found statistically associated ($P < 0.05$) with the seroprevalence of echinococcosis in study areas. The association of other variables including sampling time (P=0.230) and herd size (P=0.208) with presence of antibodies to E. granulosus was non-significant. The present study has provided the distribution of echinococcosis and associated risk factors with the seroprevalence of E. granulosus in camel which may pose serious threat to welfare of camel and possible risk of zoonotic transmission of this parasite to camel keepers.

Keywords: *E. granulosus*, camel, Balochistan, echinococcosis

TICKS (ACARI IXODIDAE) INFESTING THE LOCAL AND EXOTIC CATTLE BREEDS OF DISTRICT SWAT, KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT:

In the present study, a cross sectional study was used to determine the frequency distribution of ticks and their genera infecting livestock breeds of district Swat Khyber Pakhtunkhwa, Pakistan. Tick specimens were collected with the use of a sterilized forceps, directly from the animal and were preserved in sample collection containers with 70% ethanol. The information regarding the animal (breed, age, sex, managemental conditions and infestation rate) was collected on a predesigned questionnaire. Morphological characterization of ticks was carried through standard keys using a camera fitted stereoscopic microscope. The data was analysed using multiple regression and odd ratio at 95% confidence interval. The results showed that prevalence of ticks in tehsil Kabal, Matta and Charbagh was 25.12%, 21.49% 21.31% respectively. Among intrinsic determinants associated with tick infestation, breed of the animals showed a significant association ($P<0.05$) while no significant association ($P>0.05$) was found in case of age and gender of animals. Among extrinsic factors, grazing animals showed non-significant association ($P<0.05$) with tick infestation compared with stall fed animals ($P>0.05$). Reference to tick infestation rate, 54.31% of the animals were moderately infested followed by heavy (29.31%) and mild infestation (16.38%). Hyalomma and Rhipicephalus were the two identified tick genera. This study provides useful data on the frequency distribution of ticks and the most prevalent genera of the study area. It is useful for adopting prevention and control measures against ticks.

Keywords: ticks, livestock breeds, Swat, tick infestation

ED-124

DIETARY SUPPLEMENTATION OF PROBIOTIC YEAST IMPROVES GASTROINTESTINAL TRACT MICROBITA IN GROWING SAHIWAL HEIFERS

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ABSTRACT:

Probiotics can improve the gut health by modulating the gastrointestinal tract (GIT) microbiome in growing animals. In the ruminant stomach, feed digestion mainly occurs in the rumen part and all literature and also in the large intestinal region .However little is known regarding the effects of probiotics on the large intestine tract microbiota in growing heifers. Here, we determine the effect of *Saccharomyces cerevisiae* on some selective bacterial species of growing heifers. In a feeding trial, eight growing heifers (Sahiwal breed, 6 to 7 months) were randomly divided into two equal groups (control and probiotic). During the trial, both groups were offered control (National Research Council recommended) diet. The probiotic group received control diet plus probiotic yeast (YeaSac1026; 5g/d/animal/corresponding to 2.5×1007 CFU/g *S. cerevisiae*). The experimental period was 120 days. 16S rRNA gene sequence of selective isolates were also done. The supplementation of the probiotic yeast significantly ($P<0.05$) decreased the pathogenic (CFU/g) species counts ($P<0.05$) increases the beneficial (CFU/g) species counts in the ruminal gut; resultantly in improved gut health in dairy heifers. 16S rRNA gene sequence of selective isolates results showed that mostly *Enterococcus*: KP256014, KP256017, KP25602 and *Lactococcus*: KP256012 were higher in yeast fed groups. Thus, it can be concluded that manipulation of the GIT microbiota at the growing phase of life may result in a visible decrease in pathogenic gut microbiota and decrease in beneficial type at the advanced stage of life.

Keywords: Probiotic, *Sahiwal* heifers, gastrointestinal tract, *Lactococcus*, *Enterococcus*, E.coil

BRM-125

EPIDEMIOLOGY OF ZOONOTIC BRUCELLOSIS IN LIVESTOCK FARMS IN PAKISTAN; "AN UNDERESTIMATED PUBLIC HEALTH PROBLEM"

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ABSTRACT:

Brucellosis is an emerging zoonosis of public health importance in Pakistan. In Pakistan, brucellosis is under-reported due to insufficient awareness, scarce diagnostic protocols as well as lack of its epidemiological understanding. Various livestock species act as carriers (small and large ruminants); however, their epidemiology for brucellosis in the ecosystems in Pakistan is not well understood. An active disease surveillance study was conducted for a period of one year in rural and urban areas of Khyber Pakhtunkhwa, Pakistan in 2016-17. Samples were collected from 504 smallholder livestock farmers and simultaneously their animals were also sampled respectively. Diagnostic tests i.e. SPAT, RBPT, ELISA, and PCR were used for human samples diagnosis; while SPAT and PCR were adopted to diagnose the animal samples. Data was analyzed through R- software conducting regression models. A seroprevalence of Anti-Brucella antibodies in humans detected were 4.3%; buffalo 5.2%, cattle 7.9 %, goats 4.6 % and sheep at 2.7 %. The results suggested that farmers having infected cattle and buffaloes were at 3.6 (C.I 95%; 1.8-6.8) times higher risk of getting the infection. While amongst the risk factors studied here; "having knowledge about the disease" and "education status of the farmers" were found significantly (P-value=0.05) associated with occurrence of zoonotic brucellosis in humans. Here we have identified the anti-Brucella antibodies in humans and livestock in Pakistan. The results of our study could be an important contribution to the designs control and prevention strategies in Pakistan.

Keywords: Epidemiology, zoonotic, brucellosis, diagnostic protocols

FSE-126

PROVING ABIOTIC STRESS TOLERANCE IN CEREALS: AN INTEGRATED APPROACH TO ACHIEVE GLOBAL FOOD SECURITY

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ABSTRACT:

Cereals are considered among major staple foods across the globe. Omics technologies, especially the most recent trends in genomics, proteomics, transcriptomics and metabolomics have revolutionized the scope to improve the qualitative and quantitative traits of crop plants. Biochemical markers like antioxidants, stress induced proteome and metabolites are key targets for crop improvement having resilience to abiotic stresses under global climate change scenario. Moreover plant breeding has gone through periodical advancements starting from pre-Mendelian era, to conventional breeding, mutation breeding, polyploidy, tissue culture, molecular marker assisted breeding, trans & cis genes and most recent one i.e. genome editing for crop improvement. An integrated approach involving physio-biochemical, molecular and omics technologies can be helpful in improving abiotic stress i.e. drought, heat salinity tolerance. Comparative competence of these advance crop improvement technologies with special reference to precision, time span, cost, regularization issues and capacity building is discussed.
Keywords: antioxidants, stress proteome, metabolites, MAS, genome editing

BRM-127

ANTIBIOTIC RESISTANCE AND RESISTANT GENES IN E. COLI BELONG TO DIFFERENT PHYLOGENETIC GROUPS

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ABSTRACT

Using MacConkey agar, *E. coli* were isolated from 285 samples including 125 tonsil swabs, 80 tissue samples from different slaughter houses (20 each intestine, liver, meat and kidney), and 80 samples from super- and wet-markets (each 20 meat and liver) collected both in summer and winter. Phylogenetic groupings (A, B1, B2 and D) and frequency distribution of 13 major virulence genes (*fimH, papA*, *papC*, *afa*, *focG*, *ireA*, *iutA*, *kpsmII*, *vat*, *fyuA* and *hlyD*) were determined by polymerase chain reaction (PCR). Isolates were tested for 15 antibiotics (CRO, AMX, GEN, STR, TET, CHL, CLR, LVX, OFX, GAT, CIP, SXT, AMP, LIN and AZM) according to the disc diffusion method and antibiotic resistant genes {*tet(A), tet(B), tet(C), strA/strB*, *aadA*, *aac(3)IV)*, *aadB*, *sul1*, *sul2* and *sul3*, *blaCMY-2*, *blaTEM* and *blaSHV}* using mPCR. The most prevalent phylogenetic group was group B2 (59.3%), followed by groups B1 (28.1%), A (8.1%) and D (4.5%). The most prevalent virulence gene in group B2 isolates was *kpsmII* (74%) followed by *iutA* (71%) and *fimH* (70%), *papC* (47%), *cnf* (40%) and *hlyD* (32%), while B1 isolates were higher in *ireA* (92%), *fyu* (77%) and *vat* (57%). Resistance for LIN was the highest in overall (96.3%, 77/80) isolates as well as from pig farms (100%, 20/20) and different markets (100%, 20/20, 85%, 17/20). Resistance for other antibiotics such as AMX, TET, AMP and SXT was found 82.5% (66/80), 63.7% (51/80), 58.7% (47/80) and 50% (40/80), respectively. The most prevalent ARGs in the isolates recovered from pig farms was *blaTEM* (100%, 20/20), followed by *blaCMY-2* (80%, 16/20), *tetA* & *tetB* (60%, 12/20) and *tetC* (50%, 10/20). *E. coli* became more and more diverse along the PSCP with group B2 being the most prevalent.

Keywords: antibiotic resistance, *E.coli*, phyltogenetic, antibiotics

FSE-128

IN VITRO ALPHA- GLUCOSIDASE INHIBITORY ACTIVITY OF DICHLOROMETHANE EXTRACT OF RANUNCULUSMURICATUSAND CASSIA FISTULA

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ABSTRACT:

Herbal medicinal plants have different types of inhibitory activities such as *Cassia fistula* and *Ranunculus muricatus* have antioxidant properties, alpha chymotrypsin inhibition as well as antifungal activity Current study was designed to evaluate the alpha-glucosidase inhibitory activity of dichloromethane extract of *Cassia fistula* and *Ranunculus muricatus*. Total twenty-four samples of plant extract were examined. The plant parts were extracted using dichloromethane and methanol by using rotary evaporator. Inhibitory activity was measured by using spectrophotometer by taking absorbance of yellow color produced due to the formation of *p*-nitrophenol at 400 nm. Acarbose was used as standard control. For determining antioxidant activity DPPH assay was performed. Tests for phytochemical screening were performed for the identification of different secondary metabolites. Alkaloids were absent in all parts of both plants while flavonoids, triterpenoids, cardiac glycosides and saponins were present in all parts of both plants. Tannins were present in all parts of both plants except the root part of *Ranunculus muricatus*. Anthraquinones (bound) were present in aerial, root and seed of *Ranunculus muricatus* and leaves of Cassia fistula. While as, anthraquinones were only present in seeds of *Ranunculus muricatus*. Dichloromethane extracts exhibited the highest alpha-glucosidase inhibitory activity. A significant alpha- glucosidase inhibitory activity was observed in both plant extracts and data was analysed statistically by using one-way ANOVA. It was concluded that *Cassia fistula* and *Ranunculus muricatus* dichloro methane extract has potential antioxidant and α-glucosidase inhibitory activities.

Keywords: *Cassia fistula*, *Ranunculus muricatus*, alpha-glucosidase inhibitory activity,dichloromethane, ethanol

AH-129

THE ECONOMIC LOSSES AND BURDEN OF ENDOPARASITES IN BUFFALO AND CATTLES OF RURAL PUNJAB "AN UNDERESTIMATED EMERGING THREAT"

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ABSTRACT:

Parasitism causes serious clinical infections, welfare problems and enormous losses in terms of production in buffaloes (*bubalus bubalis*) and Cattle of rural smallholder farmers. Therefore, a cross sectional population based survey in parallel to mass vaccination, the first of its nature in Pakistan was conducted in province of Punjab to estimate the point prevalence and economic losses due to endoparasites in large and small ruminants, by endeavors of directorate of animal disease reporting and surveillance from January to March 2015. Fresh fecal samples were collected randomly from (n = 242,106) large and small ruminants all over rural Punjab. Standard parasitological techniques were performed to spot parasite eggs and larval determination of specific parasites was performed by copro-culturing. The result showed a cumulative higher prevalence of 57.02%. Cattle (57.15%) were found affected the most followed by buffaloes (54.43%). Geographically in South Punjab (75.8%) samples were positive, significantly ($P < 0.05$) higher than (41.3%) in North Punjab and (35.37%) in Central Punjab. Amongst the parasite families specifically nematodes were (26.94%) found highly prevalent than trematodes and cestodes. The economic losses due to reduced milk and meat production calculated were approximately PKR: 12701.06 million (122.12 Million USD) per month in the Punjab. It was concluded that endoparasitism is one of the major health problems prevailing in livestock population under rural management causing massive economic losses and stern clinical infections. The results of this mega survey will have vital implications in future for the endoparasitc infections control in small and large ruminants in Punjab province, Sub-Tropical Continental Lowlands of Pakistan**.**

Keywords: economic losses, buffaloes, endoparasites, trematodes, cestodes

AH-130

SERO-EPIDEMIOLOGY OF TOXOPLASMOSIS IN PASTORAL GOAT HERDS AND SHEPHERDS IN PUNJAB, PAKISTAN

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ABSTRACT:

Toxoplasmosis is a zoonotic and food borne disease of animals and human beings, frequently associated with abortion and neonatal loses. It is an emerging public health concern in Pakistan currently. A cross sectional study was carried out in Fort Munro (District, D.G.Khan) south of Punjab, Pakistan during in 2013, to investigate the sero-epidemiology of Toxoplasmaosis in apparently healthy goat herds and shepherds. A total of 237 goats from 52 pastoral goat herds and 92 shepherds were screened by LAT test. Data was entered and analyzed by SPSS 20.00 version and Chi square test was applied. Overall prevalence of 27% was recorded in goats and 19.6% was observed in herd attendants. The prevalence of disease was (14.77%) in Pahari and (12.24%) in Hairy goat breed whereas in female prevalence of diseases was significantly (P=0.02) (21.52%) higher as compared to males (5.49%). High prevalence was seen in age > 1-3 years in goats. Contaminated natural reservoirs of water (P= 0.022), presence of cats and dogs in herds (P=0.014) and offering raw meat offal to cats and dogs (P=0.022) were significantly associated with Toxoplasmosis for goats while mutual grazing of herds with other animals (P=0.105) was not proved to be significantly associated with Toxoplasmosis. Factors like, meat tasting while cooking (P= 0.013), eating unwashed fruits and raw vegetables (P=0.04) and access of cats to drinking water and food (P=0.02) were significantly associated with Toxoplasmosis in herd attendants. The comparatively high seroprevalence in goats and their attendants in study area suggest that being a zoonotic and food borne infection Toxoplasmosis is posturing a great risk to animal and human health. The need of monitoring, surveillance of disease and public health policies should be enforced in order to reduce the disease burden in human beings and animals.

Keywords: toxoplasmosis, sero-epidemiology, food borne, zoonotic

ED-131

CHALLENGES AND FUTURE SCOPE OF SME SECTOR: ESPECIALLY ACCESS TO FINANCE IN BALOCHISTAN

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ABSTRACT:
Small and Medium Enterprises (SMEs) play a vital role in the development of an economy. The contribution of Pakistani SMEs to economic development is less as compared to other countries, yet their significance cannot be denied. The SME sector is facing multifarious problems with their growth making it difficult to significantly contribute to Pakistan's GDP. There is substantial evidence that SMEs face larger growth constraints and have less access to formal source of external finance, potentially explaining the lack of SMEs' contribution to growth.

This paper attempts to focus on this major constraint "SME's lack of Access to Finance" faced by the SMEs of Balochistan, the chief barriers for SMEs in Pakistan particularly in Balochistan. The impediments that SME's face generally with respect to getting access to finance are collateral issues, complex procedure in obtaining financial support from financial institutions (banks), wide cooperation gap between financial institutions and SME sector. The loaning mechanism is devised such that the major portion of SMEs does not have the security needed for collateral, without which the sanction of a loan from banks appears formidable. Most SMEs appear deficient in accounting and financial information keeping them to avail information-based or financial statement-based lending and respective credit scoring. The majority relies on the personal finances, credit from suppliers, loans from friends and relatives. In Balochistan Banks' role is limited as taxes, corruption, high interest and prices are the main grievances.

The bankers point of view "that SMEs do not provide enough collateral guarantees, and their records are not up to date according to the bank or financial institutions requirements. If SMEs provide enough collateral or guarantees, banks/financial institutions are ready to sanction the loan. On the other hand SMEs complained about the banks role, those banks do not provide them necessary information to enable them to solve the collateral/guarantee issues.

Keywords: Small and Medium Enterprises, economy, financial, sanction loan

AP-132

STUDIES ON BIOCHEMICAL ASPECTS OF SAHIWAL AND CROSS-BRED (SAHIWAL X FRIESIAN) BULLS SEMEN

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ABSTRACT:

The pivotal way of livestock development through selective breeding is the selection of breeding bull. Evaluation of semen characteristics plays an important role in selecting breeding bulls. The quality of semen depends on sperm concentration, motility percentage of spermatozoa and proportion of live and dead spermatozoa. This experiment was conducted to study various parameters related to semen quality in Sahiwal and Crossbred (Sahiwal x Friesian) Bulls. A total of 80 samples (whole semen=40 & Seminal plasma=40) from twenty semen donor bulls (10 Sahiwal & 10 Sahiwal x Friesian) maintained at SPU Qadirabad, district Sahiwal were used in this study. Physical parameters including volume, concentration, mass activity, mass motility and dead sperm percentage were recorded. Biochemical constituents (total proteins, cholesterol), macro (sodium, potassium, calcium, and magnesium) and micro minerals (iron, copper) were determined in the whole semen and seminal plasma separately. Among the physical characteristics, concentration of spermatozoa was significantly higher in Sahiwal (102.20±8.65 106/ml) than crossbred (894.25 ±10.44. 10 6/ml) bulls. Dead sperm percentage was significantly higher ($P<0.05$) in crossbred than Sahiwal bulls. Overall mean for total proteins concentration in the whole semen and also in seminal plasma of the crossbred bulls (72.79±0.79 and 12.35±0.37g/dl, respectively) were significantly higher those obtained for Sahiwal bulls (69.33±0.89 and 12.24±0.31g/dl, respectively). In the seminal plasma of crossbred bulls, total proteins, sodium and magnesium concentrations were higher ($p<0.05$). Average cholesterol and iron concentrations were significantly higher for Sahiwal bulls. Young bulls had more cholesterol and old bulls had higher concentration of sodium in the seminal plasma. Present study revealed that semen collection frequency, both Sahiwal and Friesian bulls (either young or old) did not show negative effect on various physical, biochemical constituents of semen up to 4 weeks of collection.

Keywords: Semen, Sahiwal bulls, Cross-bred bulls, Sperm motility

AP-133

EFFECT OF FEEDING DIFFERENT LEVELS OF UREA TREATED SUGAR BEET PULP ON WEIGHT GAIN OF BULKHI SHEEP UNDER THE SUBTROPICAL CONDITIONS OF DERA ISMAIL KHAN

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ABSTRACT:

Sugar beet pulp is a by-product of sugar industry and its nutritive value may be enhanced further through various treatment regimes. Current study was performed to evaluate the effect of feeding various levels of urea treated sugar beet pulp in term of gain in body weight of Bulkhi lambs and economics of four different rations. Twelve Bulkhi lambs of similar age (24 -30 weeks) and same weight (30 ±1.5kg) were distributed into four different groups named as (Group CD; UTB; 2UT and 4UT); consisting of three lamb and getting Control diet, untreated sugar beet pulp, 2 % urea treated sugar beet pulp and 4 % urea treated sugar beet pulp, respectively. Experimental period lasted for 35 days after 10 days of adaptation period. Daily average feed intake of four groups CD; UTB; 2UT and 4UT fed on four different rations was (944.7 d ±3.065, 1176.7a ± 6.299, 964.0b ± 6.233, 947.3c ± 5.114) respectively and daily average weight gain of four groups of four groups were (118.28 d ± 0.543, 123.24c ± 1.056, 131.91b ± 1.699, 147.33a ± 2.058) respectively. Statistically all four means of daily feed intake and weight gain were significantly different from each other. Lambs fed on 4% urea treated sugar beet pulp gain more weight ($P < 0.05$) then those fed on 2% urea treated sugar beet pulp and untreated sugar beet pulp. Feed conversion ratio (FCR) of the four groups was recorded as (7.9 b ± 0.053, 9.1a ± 0.066, 7.7 b ± 0.046 and 6.6 c ± 0.119) for groups (CD; UTB; 2UT and 4UT) respectively, highest FCR was noted for group UTB followed by group CD, 2UT and 4UT. Highest net return value (Rs13575 a ± 0.1220) was noted at treatment 4UT where 4% urea treated sugar beet pulp was given while minimum net return (Rs12804 d ± 0.712) was observed in group CD where control feed was offered to lambs. Profitability of group 4UT was highest (Rs1575 a ± 0.1240) as compared to CD. It is concluded from current study that 4% urea treated sugar beet pulp produced best effect as compared to control, growth performance and profitability of Bulkhi lambs under subtropical condition of district Dera Ismail Khan. These findings may be used for developing a viable entrepreneurship model under the Dairy Science Park.

Keywords: Sugar beet pulp, urea treated, Balkhi lambs, Dera Ismail Khan

PH-135

INCIDENCE OF DRUG RESIDUES IN MILK AND MEAT AT DIRSTRICT KARAK, KP, PAKISTAN

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ABSTRACT:

Drug residues are the very small amounts of drug or its metabolites that can remain in animal products (milk, meat, egg) and therefore make their way into the food chain. Several deleterious effects are associated with drug residue in animal's product. The aim of this project was to check for drug residue in milk and meat samples obtained from district Karak,, KPK. For this purpose 200 milk and 200 meat samples were aseptically collected and transferred to Pharmacology lab of Animal Health Department in University of Agriculture Peshawar for analysis. Antibiotics residue was checked through microbial inhibition test and Thin layer Chromatography (TLC). The results show that four (4) samples out of 200 contain antibiotic residue while milk samples were free from antibiotics residue. Similar studies on large scale will give a clear picture about the incidence of drug residue in district Karak and other areas of KP.

Keywords: drug residue, milk, meat, karak

FSE-136

PAKISTAN WATER RESOURCES: DEVELOPMENT AND CONSERVATION NEEDS FOR SUSTAINABLE CROP AND LIVESTOCK PRODUCTION

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ABSTRACT:

Pakistan with 22.5 mha cropped area and 33.0 mt cereal, 12.0 million bales of cotton, 30 mt of milk, 530 million poultry birds, 11.5 billion eggs and 140 million livestock heads can rightly be said an important bread-basket of the world. It nourishes 210 million Pakistani and 20 million Afghans. Pakistan lies in arid and semi-arid region of the world and receives annually 40 MAF rain water over 205000 km2 catchment area of the Indus plain of which 25 MAF falls on the cultivable canal command area. This corresponds to an average depth of 23 cm. The distribution and intensity of rainfall is however, so insufficient and irregular that raising of satisfactory crops and livestock is not possible. For sustainable crop and livestock production country has to depend upon surface and ground water resources which are limited and always at risk. All the rivers flowing into Pakistan originate from the glaciers lying on the Western side of Himalayan Ranges in Tibet, China and Indian occupied Jamu & Kashmir enter Pakistan after running hundreds of Km through India. Mean annual flow of the Indus and its tributaries is 130-140 MAF. The 4500 m3 per capita water available in 1947 has fallen to less than 1000 m3 in 2015 and is expected to fall less than 850 m3 in 2025. The ground water is saline, the river water and 1 M tubes-wells installed in the Indus Basin pumping 45 MAF water add 15 M tons of salts annually in the fertile lands of Punjab and Sindh. The live water storage capacity of Mangla, Tarbela and other small dams is less than 10 MAF hardly 6% of all the surface water resource available,per capita storage capacity is less than 150 m3, slightly higher than 100 m3 in African famine-hit countries. Pakistan must has to develop and develop-soon its water storage capacities to at least 30 MAF, regulate ground water extraction and utilization, and opt efficient irrigation systems i.e. drip, sprinkler and hydroponics for sustainability.

Keywords: water resources, arid, semi arid, livestock production, Indus basin, hydroponics

PH-137

CONTRIBUTION TO THE STUDY OF SOME LIPID AND LIPOPROTEIN PARAMETERS OF THE ORGANS IN OBESE RATS SUPPLEMENTED WITH GREEN MICROALGAE

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ABSTRACT:

Obesity in men affects all age groups in society. One can simply define obesity as the disease in which excess fat mass has accumulated until it has undesirable effects on health. However, the amount of fat in excess, its distribution in the body and the associated morbidity show considerable variation from one obese subject to another. Obesity is a risk factor for several chronic diseases such as cardiovascular diseases, hypertension arterial, diabetes type 2CVD, HTA, DT2 and dyslipidemia. In our work we were interested in the study of the effects of a hyper lipid and hypercaloric diet supplemented in green algae on the lipid and lipoprotein content in the plasma and organs, for this we used an animal model: the rat "Wistar" fed at different diets: standard diet, standard diet enriched in green algae, cafeteria, cafeteria enriched with green algae. Our results show that the cafeteria diet is responsible for an increase in body weight in obese rats. Green microalgae have a beneficial effect and improve body weight disorders associated with obesity where a fall is observed in obese rats fed on diets enriched with green algae. Also, decreases in total cholesterol, HDL, LDL, VLDL, and triglyceride levels were observed in the liver and adipose tissue and in the serum in obese rats receiving a microalgal-based cafeteria diet. Then, we can deduce that the green microalgae (spirulina) rich in omega 3 PUFA have beneficial effects on the lipid and lipoprotein parameters in the obese. Thus the integration of green algae as a complement in a nutritional diet can help to improve the lipid profile and reduce the incidence of obesity in the long term time.

Keywords: Obesity, lipid, rats, green microalgae, supplementation, disease.

AP-138

EFFECTS OF SOME FEED ADDITIVES ON IN VITRO DIGESTION, RUMEN FERMENTATION AND METHANE PRODUCTION IN DIFFERENT FORAGE AND CONCENTRATED FEEDS

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ABTRACT:

Essential oils as natural products (EO) sometimes modifying rumen fermentation parameters. A number of studies have recently evaluated the ability of essential oils to reduce enteric CH_4 production due to high doses (*i.e.*, >300 mg/L of culture fluid). In this study, effects of oregano, sage and mint EO (essential oil) were evaluated in *in vitro* 24 h batch culture of diluted rumen fluid at 10:90 and 90:10 forage: concentrate included diet. Treatments were: control (C), oregano (O, 300mg/L), sage (S, 300mg/L) and mint (M, 300mg/L) essential oils. After 24 h, pH was determined in the culture fluid and samples were analyzed for volatile fatty acid (VFA) concentrations, organic matter digestibility (OMD), total gas and methane productions. Rumen acetate, propionate and butyrate proportions were not affected by EO supplementation ($P>0.05$). Similarly, rumen total gas production and OMD were not affected by EO supplementation ($P>0.05$). However oregano, sage and mint oils increased rumen methane production and decreased rumen pH ($P<0.05$). While increasing concentrate feed ratios increased total gas production and OMD; decreased methane production and pH in the rumen ($P<0.05$). Contrary to expectations, these EOs increased production of methane in the rumen. In this case, the performance of the animals may be adversely affected.

Keywords: rumen fermentation. Methane production, feed additives, essential oils

AP-139

ROLE OF FEED ADDED ANISEED AS IMMUNUMODULAN AND GROWTH PROMOTER IN BROILER CHICKS

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ABSTRACT:

As a medicinal plant, aniseed has been used as immune stimulating andantiparasitic, antifungal, antipyretic and analgesic etc.An experiment was conducted to investigate the effect of feed added aniseed on the immune response, lipid levelin serum and overall performance of broiler chicks. For this purpose two hundred and forty, day old broiler chicks were randomly distributed into four groups designated as A, B, C, and D and each group was further divided into two subgroups. Each subgroup was replicated three times with 10 checks per replicate for different treatments. One of the subgroups in each groups was vaccinated with NDV (New castle diseasevaccine), IBV (Infectious bronchitis) and IBDV (Infectious bursal disease) vaccine according to the normal schedule. The birds in Group A were kept as a control, while group B, C and D were treated with ground aniseed added feed @ 5, 10, and 15g/kg, respectively. Body weight and feed conversion ratio were significantly ($p<0.05$) improved in group B as compared to other groups. No significant ($p>0.05$) difference was recorded in mean feed intake, dressing percentage, breast weight, leg, thigh, intestine, heart, liver, spleen and thymus, while significant ($p<0.05$) difference in bursa was recorded in group C and gizzard in group D. Group D had significant effect on the reduction of total cholesterol and triglycerides as compared to others. Non-significant difference in LDL (Low Density Lipoprotein) values were found, however numerically high HDL (Higher Density Lipoprotein) values was found in group A as compared to other groups. Mean antibody titer against ND, IB and IBD was significantly ($p<0.05$) higher in group Ddetermined through heamagglutination inhibition (HI) test. It is concluded that feeding of aniseed @ (10g/kg) added in feed is better for improving body weight gain, FCR, immune response, increasing HDL level and decreasing LDL level.

Keywords: Higher Density Lipoprotein, Low Density Lipoprotein, New castle disease, Infectious bronchitis, Infectious Bursal Disease, Aniseed added feed.

AH-140

VACCINE; A RATIONAL CONTROL STRATEGY FOR *MYCOPLASMA BOVIS* INFECTION IN CATTLE

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ABSTRACT:

Due to progressive resistance to commercially available antibiotics, development of an effective vaccine for the control of *Mycoplasma bovis* infection in cattle is a rational approach. Hitherto little progress has been made in developing protective vaccines against *M. bovis*. Formerly, an attempts using vaccine with formalin as an inactivant for mycoplasma infections have been largely unsuccessful or produce only transient protection probably because of the damaging effect of formalin on the antigenic composition of *M. bovis*. Sometime formalin inactivated *M. bovis* vaccine actually led to an increase in disease. Modern approaches to vaccination have also been disappointing as an experimental vaccine composed of either partially purified total protein extract and membrane proteins or both from *M. bovis* also increased pneumonic pathology. Moreover attempts to develop subunit preparation often failed to protect the animals from disease. No commercial vaccines exist for *M. bovis*, despite evidence that this is a major cause of calf pneumonia, mastitis and arthritis. More recently live attenuated vaccine has been observed effective, but its mechanism of protection is yet to be defined. This review provide an insight for future research to elucidate more specific, and conserved virulence factors involved in the pathogenesis of *M. bovis* for the development of an effective subunit vaccine. Development of effective control strategy will contribute to research capacity building primarily by bringing together local expertise in animal pathogen surveillance with state of the art proteomic, genomic and vaccine development technologies through international collaboration. Success of this project will yield a vaccine for *M. bovis* that cripples productivity and livelihood of some of the poorest farmers. Progress toward elimination of *M. bovis* infection stands to dramatically enhance the surety and viability of the cattle farming industry domestically as well as improving potential for export not only of disease-free cattle products but also cutting-edge preventative technologies.

Keywords: vaccine, *M.bovis*, attenuated vaccine, subunit vaccine, disease free

AH-141

HOMOLOGY MODELLING AND MOLECULAR DOCKING STUDY OF CORTICOTROPHIN RELEASING HORMONE: A SUCCESSFUL APPROACH TO TREAT THE STRESS RELATED DISEASES.

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ABSTRACT:

Corticotropin releasing hormone receptors (CRHRs) also called as CRFRs orticotrophin releasing factor receptors is related to G-protein coupled receptor family. CRH has medical relevance to stress, gut motility, immunity and feeding behaviour. It is a releasing hormone and is encoded by CRH gene. CRH is made of 41 amino acid peptides resulting from 196 amino acid prepro hormone. Rising evidence shows that there are two CRH receptor subtypes, (CRH1-R) and (CRH2-R) are receptor 1 and 2 respectively. These receptors play a key role in the regulations of biological functions that are induced by CRH. To treat stress-related gut dysfunctions and stress-related disorders, manipulation and balancing of CRH1-R and CRH2-R have become now a novel concept. Its 3 D structure is not fully recognised, but it is thought that this peptide central section is helical and both the terminal ends are comparatively unsaturated. We can predict its three dimensional structure from its amino acid sequence of a template protein using homology modelling techniques through MOE and I-TASSER program. The evaluation and validation of the 3D structure were done with RAMPAGE and ERRATE online server. The 3D structure of the target protein and their active site prediction helps us to design new drug molecules for treating stress-related disorders. CRHR was docked with nineteen CP376395 derivatives that act as an antagonist.

Keywords: CRHRs orticotrophin, I-TASSER, 3 D structure, CP376395 derivatives.

ED-142

NEW TECHNOLOGY POSSIBILITIES AT DAIRY FARMS FOR PROFITABLE PRODUCTION

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ABSTRACT:

Animal production is still depending on manpower and working conditions at the farms are very hard. Daily routine requires detail technical knowledge and efficient usage of these information for successful animal husbandry system. Many daily activities aim at ideal animal production. Experts must visit farms and conduct visual scoring at specific days for some managemental decisions. İt takes time and requires experience also sometimes coupled with highly expensive methods. But recent developments help farmers for best and easy production practices using smart facilities which are developed for using latest technologies. Now fully automated systems are available to continuously and quantitatively measure production, behaviour and health of animals using these technologic aids. New era provides many realistic management possibilities using smart applications for dairy farmers. Therefore, technological developments are the main research area for animal productivity and sustainability. The application of new technologies is a growing trend in the livestock industry and plays an important role in the future of livestock sector modernization. This review deals with valuable information on the latest challenges and key innovations affecting the dairy farming aspects of milk production and performances of the herds. Also profitable production approaches and applications for dairy farmers are tried to be summarized with detailed latest research results.

Keywords: Animal production; manpower; farming practices; animal husbandry; visual scoring; smart facilities; technological aids; industry; innovations

BRM-143

MOLECULAR EPIDEMIOLOGY OF RESPIRATORY VIRUSES IN COMMERCIAL CHICKEN FLOCKS IN PAKISTAN FROM 2014 THROUGH 2016

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ABSTRACT:

Viral diseases of poultry are a matter of great concern worldwide . Multiple common viral respiratory diseases (CVRDs) cause huge economic losses in the poultry industry. Incidence of CVRDs is not clear in many countries including Pakistan. Incidences of 5 chicken respiratory viruses: avian influenza virus (AIV), Newcastle disease virus (NDV), infectious bronchitis virus (IBV), avian metapneumovirus (aMPV) and infectious laryngotracheitis virus (ILTV) were assessed in Pakistani commercial farms with respiratory problems from 2014-2016. While AIV and NDV were very frequently detected (in 16 to 17% of the farms), IBV and aMPV were more rare (detected in 3 to 5% of the farms) and ILTV was not detected. We characterized AIV H9 of of the G1 lineage, genotype VII NDV, GI-13 IBV, and type B aMPV strains with very little genetic variability in the 2 years study period. Co-infections with AIV and NDV were common and wild type NDV was detected despite the use of vaccines: Control measures measures to limit the virus burden in chicken flocks are discussed.
Our data showed that AIV, NDV, IBV and aMPV were prevalent in commercial poultry in Pakistan. Continuous monitoring of AIV H9 evolution and updates on vaccines are warranted to achieve efficient control against these pathogens in Pakistan. Further studies are necessary to assess circulating strains, economic losses caused by infections and coinfections of these pathogens, and the costs and benefits of countermeasures. Furthermore, farmers need to be educated about the use of vaccines against these pathogens.

Keywords: molecular epidemiology, Pakistan, avian influenza virus, infectious bronchitis virus, Newcastle disease virus, avian metapneumovirus

BRM-144

AVIAN METAPNEUMOVIRUS VACCINE MODIFIES VIRUS SHEDDING AND IMMUNE RESPONSES OF AVIAN INFLUENZA (H9N2) INFECTION IN COMMERCIAL TURKEY

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ABSTRACT:

Avian influenza (AI; H9N2) infections are emerging respiratory problems causing huge economic losses to poultry industry especially in the presence of other co-infecting pathogens. Avian metapneumovirus (aMPV) infections are widespread in turkey and chicken populations. Live attenuated aMPV vaccines are routinely used to prevent aMPV infections in poultry. The possible effect of aMPV vaccine on replication and immune responses of AI (H9N2) virus in commercial turkeys was evaluated in this study. Turkeys were divided into following four experimental groups: negative control, non-vaccinated non-challenged (NVNC), non-vaccinated challenged (NVC), vaccinated non-challenged (VNC) and vaccinated challenged (VC). The presence of antiviral antibodies was tested pre and post challenge to confirm infection. Our study revealed enhancement in the severity of respiratory clinical signs associated with rapid lesion development in turkeys of the VC group than NVC. Moreover, turkeys in VC group showed significant increase in mortality (10%). All infected turkeys showed positive results for AIV shedding; however, the pattern of virus shedding was different, with turkeys of VC group showing more pronounced virus secretion than the turkeys in the NVC group. In addition, turkeys of VC group showed significantly reduced anti-AI antibody responses and interferon gene expression than turkeys of NVC group. The present study revealed that aMPV vaccine could facilitate replication of avian influenza viruses and thus avian influenza virus infections may be worse after aMPV vaccination especially in AIV endemic areas.

Keywords: Avian metapneumovirus, H9N2, vaccine, replication, immunity

FSE-145

RED MEAT PRODUCTION TRENDS IN MONGOLIA

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ABSTRACT:

The aim of the study was to analyze the commercial status of red meat production in Mongolia. Following issues were researched: general economy of Mongolia, current red meat production, consumption, import and export status of that meat production.
In that regard, 40 meat companies in 21 provinces of Mongolia were examined. In addition, livestock sector of Mongolia was evaluated by using SWOT analysis. In the result sustainable red meat production strategies were presented.
Keywords: red meat, Mongolia, production, export, import, consumption

AH-146

REAL-TIME FLUORESCENCE LOOP-MEDIATED ISOTHERMAL AMPLIFICATION FOR DETECTION OF hCD39 IN TRANSGENIC PIG

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ABSTRACT

Using ESE-Quant tube scanner testing platform, we established a rapid hCD39 detection method that is real-time fluorescence loop-mediated isothermal amplification (RTF-LAMP). The method employed a set of six specially designed primers for amplification of nucleic acid under isothermal conditions at 63℃ for 45 min. The amplification process of LAMP was monitored by the addition of SYBR Green I dye prior to amplification. The fluorescence intensity of SYBR Green I dye was used as the standard of the results. Results of the study showed that the sensitivity of the method was 3 fg•μL-1, and there was no cross-reactivity with the genes of related and unrelated detected, such as hCD46, LEA29Y. More importantly, this method could complete testing of buccal swabs specimens of transgenic pigs. The purpose of our study was to develop a simple, economical, rapid method with good sensitivity and specificity. Using the method will not result in damage to the living body samples for testing, suitable for quick and easy on-site operation.

Keywords: Loop-mediated isothermal amplification(LAMP) , Specific detection , hCD39

DT-147

EFFECT OF SMOKING ON PHYSICO-CHEMICAL PROPERTIES AND SENSORY ATTRIBUTES OF MUDAFFARA CHEESE USING *CORIANDRUM SATIVUM*

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ABSTRACT:

The dairy products are numerous in types; composition and taste, of those cheeses are the most popular dairy products worldwide. Cheese was primarily a concentrated form of milk that has a prolonged shelf life with good taste and diverse flavor. It is a dairy product with the best nutritional value and health benefits, which suit the different panel and living standards of the consumers, which is produced in a wide range of types, forms and varieties throughout the world. Smoking of cheese is relatively a new technique for cheese preservation, which prolongs its shelf life, prevents its moisture loss in addition to giving special color and nice flavor.

This study was done to compare physiochemical and sensory attributes of smoked and non smoked Mudaffara (Braided) cheese using *Coriandrum sativum* seed, which is a Mediterranean herbal plant. Mudaffara cheese was prepared from fresh cow's milk (15 liters) by the known traditional methods using rennet, starter culture, black cumin seed and table salt. The resulted cheese was divided into two portions; the treated cheese, which was smoked by *Coriandrum sativum* in a close smoker using charcoal for about 2 hours. The second portion was left as a control. Both cheeses were packed in labeled plastic containers and stored for five weeks in the refrigerator. The analysis was carried out in the first day, then every week. The result indicated that the smoked Mudaffara cheese was significantly ($P<0.05$) higher in total solids, protein and fat contents compared to the control cheese, which revealed significantly ($P<0.05$) higher acidity compared to the smoked Mudaffara cheese. The study also found significant ($P<0.05$) variations in protein and total solids content and the acidity of Mudaffara cheese during the storage period.

The smoked Mudaffara cheese showed higher scores for flavor, salt and overall acceptability as was stated by the panelists, however the better color was recorded for unsmoked Mudaffara cheese. Hence the present study concluded that smoking using *Coriandrum sativum* seed improve the keeping quality and acceptability of Mudaffara cheese.

Keywords: *Coriandrum sativum*, Mudaffara cheese, smoking, chemical content, sensory properties, storage

AP-148

EFFECT OF GONADOTROPIN RELEASING HORMONE, HUMAN CHORIONIC GONADOTROPIN AND FLUNIXINE MEGLUMINE ON PREGNANCY RATES IN SAHIWAL COWS

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ABSTRACT:

The present study was conducted to know the combined effect of gonadotropin releasing hormone before AI along with post-breeding human chorionic gonadotropin and flunixine meglumine on pregnancy rates in post-partum cows. The study was conducted during 2015 at a commercial dairy farm located in Multan District, Pakistan. One hundred and fifty eight cows of Sahiwal breed above 90 days postpartum were given two injections of a synthetic analogue of PGF2α (Dalmazine; 0.075 mg cloprostenol) with an interval of 11 days. After 48 hours of the second injection of PGF2α, animals were divided into two groups. In Treatment Group (n=96), 50µg of gonadotropin releasing hormone was given followed by timed artificial insemination (TAI) 12 hours later. On day 5 post-insemination, animals were given a single injection of 3000IU of human chorionic gonadotropin. On day 14-15, animals were given 1.1 mg/kg flunixine meglumine at an interval of 12 hours for 4 times. In Control Group (n= 62), a saline injection was given 12 hours before artificial insemination and again on day 5, 14-15 post-insemination. All experimental cows were examined for pregnancy by palpation per rectum at 68 ± 1 day after artificial insemination (AI). At 68 days after TAI, 73 cows from Treatment Group and 35 cows from Control Group were pregnant. Pregnancy rates were significantly higher ($P < 0.05$) in Treatment Group (76.04%) as compared to Control Group (56.45 %). The sire (CI95 = 0.96-1.1, P = 0.21) and inseminator (CI95 = 0.98-1.1, P = 0.13) did not have effect on pregnancy result. The mean progesterone concentrations in Treatment and Control Group cows were affected by treatment. Progesterone concentrations were significantly higher ($P < 0.05$) in Treatment Group cows in comparison with Control Group. It was concluded that combined effect of GnRH, hCG and flunixine meglumine at specified time is an effective tool to improve pregnancy rates in postpartum lactating cows.

Keywords: GnRH, Sahiwal, AI, hCG

AP-149

IMMUNOSTIMULANT AND HEPATOPROTECTIVE EFFECT OF POLY HERBS (WITHANIASOMNIFERA, LIQUORICE, ALLIUM SATIVUM AND BERBERISLYCIUM) MIXTURE EXTRACT IN BROILER PRODUCTION

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ABSTRACT:

The effect of different level of herbs extracts like Withaniasomnifera, Liquorice, Aliumsativum and Berberislycium used to investigate the improvement in immunity and liver function at Agricultural University Peshawar, Pakistan. For this experiment two hundred and forty (240) chicks were randomly assigned in to four major groups A, B, C and D. Each group was further divided in to two sub-groups. Each subgroup was replicated three times carrying 10 chicks per replicate. One of the subgroups was vaccinated against ND (New castle disease), IB (Infectious bronchitis) and IBD (Infectious Bursal disease) according to schedule. Group A was kept as control, while B, C and D were treated with Withaniasomnifera , Licorice, Alium sativum and Berberislycium extract at the rate of (5gms + 2.5gms + 2gms + 8gms), (10gms + 5gms + 3gms + 9gms), (15gms + 7.5gms + 4gms + 10gms) gm/lit of water respectively. AST (Aspartate amino transfarase) and ALT (Alanine amino transfarase) was significantly ($P<0.05$) reduced in group B than rest of the groups, while serum protein and alkaline Phosphatase was significantly ($P<0.05$) affected in group B as compared with other groups. Chicks were reared in cages in an open sided house. The data was recorded for immunostimulant and hepatoprotective effect. ND, IBD and IB was significant ($P<0.05$) higher in group B. It is concluded that Withaniasomnifera, Licorice, Aliumsativum and Berberislycium) extract @ of (10gms + 5gms + 3gms + 9gms) gm/L of water could be effectively utilized to improve immunity and liver function.

Keywords: Immunostimulant, liver function, Alanine amino transfarase, Aspartate amino transfarase, serum protein, alkalyn phosphatase, Poly Herbs

AH-150

The Factors Regulating Melanogenesis: A Review

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ABSTRACT:

Melanogenesis is an intricate natural process having numerous phases, such as epidermal melanocytes, keratinocytes and also regulates pigment melanin and produced in melanosomes through melanocytes.The melanogenesis, consists of various phases, from melanocyte formation during embryogenesis up to the distribution of ittoward keratinocytes.Melanocytes are mostly categorized on the basis of melanin consolidation rudimentary capability and transference to composed keratinocytes in order to establish skin phenotypic trait and deliver epidermal fortification from numerousinducements, namely ultraviolet (UV), ultra violet radiation (UVR). Autocrine or paracrine are the key factors which can regulate the melanogenesis. This review article, present recent numerous novel research work on factors which regulate the melanogenesis. Moreover, weprovidemechanisms of melanogenesis, regulation of enzyme action in melanogenesis. Furthermore, α-Melanocyte-Stimulating Hormone and protein kinase, Keratinocytes, AANAT, Intrinsic guideline of skin coloration, and extrinsic guideline of skin coloration via ultraviolet radiation are presented, in order to provide the dedicated path to those researchers which are going to start research journey in the field of melanogenesis.
Keywords: Melanogenesis; Keratinocytes; Melanocytes; AANAT; α-MSH; Skin pigmentation.

AH-151

A CROSS SECTIONAL SURVEY ON GASTROINTESTINAL PARASITES IN BACKYARD POULTRY IN PAKISTAN

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ABSTRACT:

Backyard poultry is still the most important protein provider in Pakistan. Village women earn a reasonable source of revenue with these back yard poultry. In the mean while these scavenging birds get exposed to an emerging threat of gastrointestinal parasites in many ways. Bearing in mind the impact of GIT parasite infections on the production of poultry as the major constrain a model cross section survey was conducted in Jan-March, 2015 in the province of Punjab, Pakistan. A total of 20006 fresh faecal samples were collected from all the districts of Punjab randomly. Salt floatation technique was used for the identification of parasitic eggs. The results showed an overall prevalence of (53.93%) GIT parasites. Within nematodes the *Ascaraidia gali* showed a significant (27.29%; $P<0.05$) higher prevalence followed by *Hetrakis gallinarum* (5.81%), *Syngamus trachei* (3.1%) and *Railatina tetragona* (2.6%). While in Eimeria species significantly ($P<0.05$) the most prevalent specie was *E. tenella* (14.32%) followed by *E. maxima* (4.7%), *E. mitis* (3.78%), *E. necatrax* (2.4%) and *E. acervulina* (1.17%). GIT helminthes and enteric protozoans are prevalent in the backyard poultry as a serious problem in the study area and the regular identification of predominant nematodes and coccidian species is essential for establishing a suitable control and prevention strategy.

Keywords: GIT parasites, Salt floatation technique, *Ascaraidia gali*, *Syngamus trachei*

FSE-152

PERMISSIBLE AND IMPERMISSIBLE FOOD/DRINK IN LIGHT OF MAZAHIB-E-ARBA'A

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ABSTRACT:

Being basic rights, human beings have always given due importance to food. All religions in the world have set rules and norms for consuming the food. Islam places a serious emphasis over what a Muslim can eat or cannot eat. According to Islamic believes, it is our duty to protect our physical as well as mental health; since protecting physical health is an "Ibadah" on its own. By staying away from 'Haram' food, we are fulfilling our divine duty.

Describe some general principals of guideline in different religions and the difference in opinions of the four sects of Islam (Mazahib-e-Arba'a). Diet plays a very important role in the daily life of a believer. There are many verses in the Noble Qur'ân which draw man's attention towards himself and which invite him to carefully study his body and soul and the nature of their mutual relationship. It is believed and proved by research that whatever is consumed, has implications on physical, mental and spiritual aspects of human beings; thus Islam gives much importance to purity of food as categorized under Halal items. Those food items which fall in Haram category are actually not fit for human consumption for spiritual and scientific reasons. However there are differences and conflicting views among religions of the world regarding the food. In Islam at least four kinds of demands/needs of human body are restricted or regulated through set of rules and regulations. These include food, income , marriage and other activities. Food being the foremost need of mankind and its far-reaching implications on human activities, has given due importance in Quran and Sunnah. O' Believers! Eat of the good and pure (lawful) that We have provided you with and be grateful to Allah, if you truly worship Him." (2:172)

The Qur'ân has not restricted itself in merely mentioning the permissible and impermissible foods but goes to the extent of giving useful tips regarding a balanced diet, a diet which contains most if not all the useful ingredients required for the growth, strengthening and repairing of the human body.

Looking at the conference theme we are supposed to help the society through utilization of the available livestock resources for production of Halal food. This, in turn, will result in generation of Halal food for local consumption and export. Self employment will be generated for youth especially women. Halal concepts and certification may be integrated into the investment procedures, farm inputs, laboratory testing and marketing across the food value chain.

Keywords: Halal food, self employment, livestock, women, food value chain, religion, Islam

ED-153

A SIMPLE AND SENSITIVE HPLC METHOD FOR DETERMINATION OF CEFQUINOME IN PLASMA: APPLICATION TO PHARMACOKINETIC STUDY IN CATTLES.

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ABSTRACT:

The high performance liquid chromatography (HPLC) is a renowned method for the determination of Cefquinome in blood plasma. The Cefquinome samples from plasma were extracted with HLB and separated by HPLC on a reversed phase C-18 column with mobile phase of formic acid (0.1%) solution-acetonitrile (90:10, v/v). The calibration curves were linear ranged from 0.01-5µg/ml. The limit of quantification (LOQ) and limit of detection (LOD) were 0.04 and 0.01 µg/ml. The recovery of Cefquinome from plasma was 73.4%, 78.33%, and 77% for low, medium and high concentration samples. The intraday and inter day relative standard deviation were less than 15%. The Cefquinome were found to be stable for more than 3 months at -700°C and more than 24 hours at 40°C. The present method has been applied successfully for the pharmacokinetics study in cattle. After intramuscular administration, the mean peak serum Concentrations (Cmax) was found 2.95µg/mL and achieved after (Tmax) 1.50hr. The elimination half-life (tl/2(el)) was 2.03±0.06hrs. The Mean Residence Time (MRT) was 2.58±0.05 hrs and area under curve from zero time to infinity (AUC0-∞) was 9.67±0.72µg/mL/h. The newly proposed method was shown to be simple, rapid, economical and sensitive compared to the previously reported method, and thereafter applicable for the pharmacokinetics study in animals.

Keywords: HPLC, Cefquinome, pharmacokinetics, economical

FSE-154

ESTIMATING THE CROP LOSSES CAUSED BY FUSARIUM WILT OF CHILI AND ITS CONTROL BY TARGETING MITOCHONDRIAL RESPIRATORY SYSTEM WITH NOVEL INHIBITORS USING COMPUTER AIDED DRUG DESIGNING

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ABSTRACT:

Wilt is an economically important disease of chili crop causing considerable reduction in yield. In the present study, four areas in Punjab, Pakistan were surveyed and disease samples were collected. The incidence of disease was 25, 35, 42 and 53% in Kasur, Lahore, Sialkot, and Gujranwala. The pathogenic fungus was isolated from the infected plant parts and was identified as *Fusarium oxysporum* based on the morphological and cultural features. Many fungicides used in agriculture inhibit respiration. The mitochondrial respiratory system (complex II) is one of the most common targets for antimicrobial agents. Succinate dehydrogenase inhibitors (SDHIs) interfere with succinate dehydrogenase enzyme and disrupt the respiratory chain by binding to ubiquinone site, thus blocking the energy production as well as synthesis of the biosynthetic precursors. The present research work is focused on finding the compounds with high intrinsic activity against *F. oxysporum* causing wilt of chili. Fungicidal activity of twelve novel SDHI compounds was evaluated using mycelial growth and spore germination assay. Compounds C6 and C10 were highly active against *F. oxysporum* in mycelial growth assay with 89.5% and 88.6% inhibition while compound C11 was least potent with 64.5% inhibition. Compounds C1 and C6 were most effective in inhibiting the spore germination. The results of present study showed that compound C1, C6 and C10 were the most potent in reducing mycelial growth and spore germination of *F. oxysporum.* The shortlisted three compounds (C1, C6, and C10) have potential to control Fusarium wilt of chili and can help to deal with food security issues.

Keywords: *Fusarium*, SDHIs, ubiquinone, mycelial growth

PH-155

ISOLATION AND CHARACTERIZATION OF BACILLUS SPECIES EXHIBITING ANTIBACTERIAL ACTIVITY FROM LAKKI MARWAT, PAKISTAN

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ABSTRACT:

Antibiotics are most important secondary metabolites produced by bacteria and are used in wide range. There are hundreds of naturally occurring antibiotics that have been purified from a comparatively small group of microorganisms. Pathogenic microbes are believed to be the main cause of mortality and morbidity in humans. Antibiotic resistance has been developed among various human pathogens due to the rigorous antibiotic use. The worldwide emergence of multi-drug resistant bacteria (MDR) is a serious medical concern nowadays. The necessity to discover new antibacterial molecules is vital. In this study,18 different samples of soil were collected from various area of District Lakki Marwat, Khyber Pakhtunkhwa province (Pakistan). Isolation and purification of bacterial isolates were done using tube dilution technique. Total of 65 isolates were purified that were subjected to agar well diffusion method for the evaluation of antibiotic producing activity, only 20 isolates showed antibacterial activity against four MDR i.e. *Acenitobacter boumani, Pseudomonas auriginosa, E.coli and Staphylococcus aureus.* Antibacterial exhibiting bacteria (AEB) were identified biochemically and morphologically. The best two isolates i.e. *Bacillus pimulus* and *B. subtilis* from those that were identified as *Bacillus* were considered further for optimization for growth and activity at different parameters (i.e. pH, temperature, aeration and incubation time). Different zone of inhibition were observed from weak to large ZOI and from broad to narrow spectrum activities. The isolates exhibited maximum growth at 37 0C, pH 9 and maximum growth was recorded when isolates were incubated in shaking condition. It is concluded that the soil of Lakki Marwat contains large number of *Bacillus* that produce antibiotic & main source of antibacterial metabolites that can help to overcome resistance amongst pathogens. It is suggested that further exploration is required regarding chemical properties of metabolites and also identification of target site of new *Bacillus* metabolites.

Keywords: MDR, AEB, ZOI

PH-156

ANTIDIABITIC EFFECTS OF CAMEL MILK: SHORT AND LONG-TERM STUDIES ON MATERNAL UTERUS AND NEONATES SELECTED ORGANS

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ABSTRACT

Diabetes mellitus (DM) is a common metabolic disorder which poses substantial threat worldwide in 21st century. In present study antidiabetic effect of camel milk on hematology and histometry of gravid uteri in albino rats as well as liver and kidneys of their neonates was elucidated. Eighteen female rats were divided into 3 groups: Group A was normal. Diabetes was induced with Alloxan® in group B (diabetic control) and C (treated with camel milk @ 40ml/kg/day for 98 days). On day 60, one adult male was introduced in each group for mating. Fortnightly blood glucose was monitored. Animals were slaughtered postpartum to collect blood for hematology, maternal uterus and liver and kidneys of their neonates. Tissues were processed by paraffin technique and stained with Hemotoxylin & Eosin. Slides were examined to measure: epithelium height, endometrial glands and thickness of myometrium with Image J®. Results revealed lower ($P<0.05$) hematological parameters in diabetic control (Group B) as compared to Group A. These parameters were significantly ($P<0.05$) higher in camel milk treated rats (Group C) as compared to control (Group B). Blood glucose level in control diabetic (B) group was significantly ($P<0.05$) higher as compared to normal (A) group. Camel milk treatment reduced blood glucose level significantly ($P<0.05$) at 4th week. Histometrical parameters of uterus were significantly ($P<0.05$) higher in camel milk treated group. In conclusion, oral camel milk treatment for extended time has potential to decrease blood glucose, and slow down degenerative changes in maternal uteri and neonatal liver and kidneys. It also improves the neonatal body weight delivered by camel milk treated diabetic dam compared to the neonates of diabetic control dams.

Keywords: diabetes,pregnancy, alloxan, histology, camel milk

AH-157

TOXICOPATHOLOGICAL EFFECT OF DIETRY OCHRATOXIN A IN QUAILS *(COTURNIX JAPONICA)*

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ABSTRACT:

Mycotoxins are the secondary metabolites of various species of fungi that act as natural contaminants of human and animal feed. The present study was conducted to investigate the toxico-pathological effects of ochratoxin A obtained by culturing the spore of Aspergillus ochraceus. A total of sixty quails (n=60) were used in the study. These were divided into three groups A, B, and C. Group B and C were fed with 1 and 2mg/Kg of Ochratoxin A (OTA) respectively, while group A was kept as control. Clinical signs observed in OTA supplemented birds were depression, diarrhea, increase water intake and broken feathers. The body weight gain and feed intake was also significantly ($P<0.05$) decreased in OTA treated groups as compared to the birds of control group. Gross lesions like hypertrophy, hemorrhages, paleness and friability were observed in kidney and liver of experimentally intoxicated birds. The histopathological examination of the kidney and liver showed degeneration and sloughing of the tubular epithelium in kidney, while hepatic fatty infiltration and necrosis of liver parenchyma was observed OTA treated groups. The serum ALT, AST, creatinine and urea level were significantly ($P<0.05$) higher, whereas serum albumin and total protein were found significantly ($P<0.05$) lower in OTA treated groups compared to control group. The hematological parameters like Hemoglobin concentration, packed cell volume and red blood cells count was also found significantly lowered in OTA treated groups. The results revealed that OTA @ ≥ 1mg/kg feed are nephrotoxic, hepatotoxic and cause hematological disorder in selected avian specie. OTA is also responsible for decreased body weight and production which leads to economic losses.

Keywords: OTA, pathological alteration, quail

BRM-158

COMPARATIVE DISTRIBUTION AND MORPHOLOGICAL FEATURES OF FIVE SPECIES OF THE GENUS PIPISTRELLUS OF MALAKAND DIVISION

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ABSTRACT:

The study was conducted to investigate the diversity, prominence, distribution and morphometeric mesaurments of the genus Pipistrellus in Malakand Division from 2010 to 2013. Five species of the genus pipistrellus includes Common Pipistrelle Pipistrellus pipistrellus (Schreber, 1774), Javan Pipistrelle Pipistrellus javanicus (Gray, 1838), Coromandel Pipistrelle Pipistrellus coromandra (Gray, 1838), Least Pipistrelle Pipistrellus tenuis (Temminck, 1840) and Dormer's bat Pipistrellus dormeri (Dobson, 1875) from one family was identified. The P. javanicus and P. dormer were recorded for the first time in Malakand Division while the other three species has been previously reported from the study area. A brief description of external body, cranial and bacular measurements were documented in this paper to highlight variations among these species. No data is being identified.

Keywords: Pipistrellus, Forearm, Distribution, Malakand, Pakistan

AP-159

EFFECTS OF FORMER SIZMA (KONYA) MERCURY MINE ON MILK PRODUCTION

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ABSTRACT:

Mining extracted mineral waste are distributed along with the tissue until it reaches the mineral crushing, grinding and screening process. According to the structure of ore minerals before the water system, waste is cleaned with enrichment. After this process created after the storage of liquid waste and salt water relations often are effective ore mining and agricultural toxic metals or chemicals used in processing waste may have. Sedimentation ponds are very harmful and dangerous overload. The effects of hydrostatic pressure increases with them, and the waste or leakage of the dam wall collapse in the event of a major direct environmental hazard may happen. In this study,around the mines operated in and closed Turkey, in order to determine the effects of metallic mercury was closed since the virgin animals, plants, soil and ground water as their search for the remains,post-mining activities in Turkey to be done for recreation and off-site work is expected to shed light. Region is upon for production milk animals. In our research, we have found some poison metals in milk analyses even them are not exciding limit level.

Keywords: Mercury (Hg), Environmental Impact, Mineral Deposit, Sızma (Konya), Water, Soil

BRM-160

GOVERNMENT- ACADEMIA: MISSING LINKS AND TRUST DEFICIT WITH SPECIAL REFERENCE TO BIORISK MANAGEMENT IN KP PROVINCE

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ABSTRACT:

The trust-based relation between Government and the Academia has great impact on the health and security of a country. A strong relationship between the two provides an environment where socio-economic activities initiate and are established, or else, the potential benefits for rapid advances may be lost or delayed. The government's role and responsibilities include ensuring rule of law through building effective political institutions, conceptualizing the scholastic approach put forward by the academia, supporting at all levels the external engagement by the academic researchers and making implementable policies. Academia needs to demonstrate the value of the creative blend of theory and practice, and translate their ideas into new products, processes and services demanded by the society and the government. On part of the government exercise of public power for private gain to achieve short-term goals, poor civil service management, weak tax collection and imbalance between revenue and expenditure and lack of understanding about the consequences of academic engagement result in negative impact on the relationship. In universities indiscriminate enrolments, permanent jobs of faculty, lack of ownership for tasks, political affiliation-based leadership and limited access to resources supporting their research agenda and unfocused research make the relation unreliable. For strong relation to develop regular formal meetings, seminars, dialogues, sharing knowledge and policies be coordinated at appropriate levels.

In this article the roles and responsibilities of the government and the academia are described. An analysis of a range of issues/ specific barriers to cooperation between the two is presented. Strategies and coordinated action plans for developing trust between the government and the academia in the context of biorisk management in the province have been suggested.

Keywords: Government- Academia, socio-economic, public power, biorisk management

FSE-161

THE WORK SAFETY APPLICATIONS IN DAIRY CATTLE FARMS

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ABSTRACT

In workplaces, systematic work is carried out in order to prevent harmful situations arising from various reasons during the execution of work which is called "occupational health and safety" (OHS). According to the Law No. 6331 on Occupational Health and Safety, the obligation to perform risk assessments of all workplaces started from 1 January 2012. Cattle farming are in this respect high-risk group. The hardware and technological infrastructure of the enterprises are linked to ergonomic conditions in terms of employee and animal duties, skill level of the staff, job description and organization of the work, routine controls, operating environment conditions and production stages. Awareness is a very important step when it is taken into account that 98% of work accidents and occupational diseases are all preventable. In this context, it is necessary to define some basic criteria in order to evaluate the working conditions of livestock farms in terms of risk analysis. For this reason, it is necessary to determine whether the animals in the barn are observed and the main factors that cause these reactions are genetic, instrument equipment, shelter or personnel. In this study, animals were evaluated in terms of welfare requirements, equipment specifications, barn structure and risk factors.

Keywords: Systemic work; harmful conditions; occupational health and safety; OHS; high risk group; enterprise; farming; awareness; welfare requirements

MT-162

EFFECTS OF GRAPE LEAF POWDERS ON SOME IMPORTANT PROPERTIES OF BEEF PATTIES

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ABSTRACT:

The oxidative process of meat leads to lipid degradation, which deteriorates some quality features ofmeat such as aroma and colour. For this reason, delaying and/or preventing lipid oxidation is very important in terms of the food security. In this study, the effects of addition of Grape Leaf Powders (GLP), on pH,water activity (aw) , moisture content, colour and lipid stability in beef meat patties were determined. Beef meat patties were divided into five treatment groups; negative control (without GLP/Butylated hydroxytoluene (BHT)), positive control (0.01% BHT), patties samples containing GLP (0.5%, 1%, 2%) and stored at +4 ºC for 7 days. GLP (0.5%, 1%, 2%) addition significantly reduced ($P < 0.01$) lipid oxidation in beef patties compared to the control groups. Among all treatment groups, the lowest TBARS (Thiobarbituric Acid Reactive Substances) value (0.56 mg of malonaldehyde / kg) belonged to patties added 2% GLP; the highest TBARS value (3.67 mg of malonaldehyde/ kg) belonged to the negative control group. there was significant difference ($p<0.01$) between the pH values of the negative control, positive control, treatment groups with 0.5%, 1%, 2% GLP and these values were 6.29, 6.16, 6.10, 5.99, 5.77, respectively. The addition of grape leaf did not affect the moisture content and water activityof the patties samples ($p> 0.05$). Grape leaf powders has been quite effective ($p<0.01$) on colour values. While redness (a*) and lightness (L*) decreased according to control groups, yellowness (b*) increased with increasing grape leaf concentration. According to this study, it is suggested to use Grape Leaf Powders as a natural antioxidant in meat and meat products.

Keywords: Grape leaf powders, patties, lipid oxidation

MT-163

EFFECTS OF GROUND CRESS AND FLAX SEEDS ON SOME QUALITY PROPERTIES OF TAIL FAT

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ABSTRACT:

Tail fat is an animal product obtained after cutting off fatty-tailed sheep. It is used in many industries in the food industry because it is cheap and it gives a characteristic flavour to the products used. However, during the storage of the tail fat (depending upon the storage conditions) some degree of deterioration occurs. In this study, the efficacy of varying concentration of ground cress and flax seeds in retarding oxidative rancidity was tested on the sheep tail fat. İn addition, colour properties are also examined. The tail fat was assigned to one of the seven following treatments: Control(without FS/CS) ; tail fat with ground cress seeds (CS) 2.5%, %5%, %10%; tail fat with ground flax seeds (FS) 2.5%, %5%, %10% and stored at +4℃ for 29 days. TBA values of cress and flax seed increased with increasing concentration according to the control group during storage period ($p<0.01$). When compared to CS and FS, it was observed that the rate of oxidation of the groups added with cress seeds was slower ($p<0.01$). The addition of CS and FS increased the* and b* values while reduced the lightness (L*) of the tail fat ($p<0.01$). According to this study, it is not recommended to use as antioxidants in tail fat because of the high unsaturated fat content of cress and flaxseed. However, because nutritional value and fiber content is high in seeds, both seeds can be added into the tail fat with the aim of obtaining a functional food.

Keywords: Tail fat, cress seeds, flax seeds, lipid oxidation

FSE-164

METHANE PRODUCING POTENTIAL OF MICROBE AT RICE-ROOTED AREA ON THAILAND JASMINE RICE FIELD

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ABSTRACT:

Methane emission is a crucial issue of Global warming in Tropical zone, in this decade. Methane emission by methane-producing bacterial potential was studied in the laboratory scale at Ubon Ratchathani province, Thailand. Samples comprised of rooted (R), rooted with soil (RS) and non-rooted soil (NR) from paddy field of Jasmine rice. The results revealed that not only, methane production was greater in planted than unplanted rice field along the rice cultivation but it was caused changes in the population size of methane producing bacteria (acetoclastic methanogens), specific methane production activity and total organic carbon, correlated with methane production. Methane production rate after transplanting showed highest amount at day 56 of boosting stage (0.14 □ 0.55 mmol gdw^{-1} soil hr^{-1}). Consequently, population size of methane producing bacteria was also greater at day 56 (3.5 x 10^3 cell gdw^{-1} soil). The relationship between population size and methane production activity was highly positive (r^2 = 0.830). Total organic carbon (TOC) in the paddy field correspondingly resulted in the highest amount at rooted zone at day 42 of 30% TOC gdw^{-1}. These indicated the association of the size of methane production population with TOC and methane production activity particularly at rice rooted (rice rhizospheric) zone. These were keyed as one the influencing factors controlling methane production in paddy field on cutting global atmospheric methane budget in the atmosphere.

Keywords: methane, microbe, jasmine rice field, Thailand, Total organic carbon

DT-165

THE EFFECT OF SOYBEAN OR FLAXSEED OILS ON FEED UTILIZATION, MILK PRODUCTION AND COMPOSITION, OF LACTATING COWS

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ABSTRACT:

Feeding plant oils with high concentrations of unsaturated fatty acids (UFAs; e.g., soybean and flaxseed oils) can modify the FAs profile of milk. The effect of oil sources differing in linoleic or linolenic acid concentrations on feed utilization and milk fatty acids profile has been rarely investigated in Egypt. The objective of this research is assessment of action of soybean and flaxseed oils on milk yield and cheese properties of lactating Baladi cows. We studied the effect of soybean or flaxseed oils on feed utilization, milk production and composition, in lactating cows through a Latin Square Design. Four lactating Baladi cows were divided into 4 treatments: i) fed a basal diet of berseem clover and concentrates (60:40 DM basis; control treatment) and; ii)control diet supplemented at 2% of daily feed intake with either flaxseed oil; iii) soybean oil or; iv) soybean oil plus flaxseed oil (1:1 v/v) for 16 weeks. Fatty acids (FAs), conjugated linoleic acid and athrogenicity index of milk fat was measured. Milk was used for manufacturing white soft cheese (WSC). Furthermore, sensory evaluation of WSC samples had been taken in consideration. Milk yield of was affected insignificantly by adding oils to the diets of lactating cows ($P > 0.05$), also, in cheese, data revealed that the differences between treatments concerning total solids and ash contents and the ratio of soluble nitrogen to total nitrogen (ST/TN) are not significant at 5 % level, while cheese protein content differed significantly between treatment ($P<0.05$) with highest value in cows treated with the mix of flaxseed and soybean oils and the control showed the lowest one. Supplementation of lactating Baladi cows diets with soybean or flaxseed oils did not affect milk yield or milk composition. Also cheese total solids and ash contents didn't significantly affect, while cheese protein content differed significantly between treatment ($P<0.05$) with highest value in cows treated with the mix of flaxseed and soybean oils and the control showed the lowest one.

Keywords: soybean, flaxseed oil, Baladi cows, conjugated linoleic acid, protein content

DT-166

IMPLEMENTATION OF MODEL FOR IMPROVEMENT (PDCA-CYCLE (IN DAIRY LABORATORIES

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ABSTRACT:

Continuous Quality Improvement (CQI) is an approach to analyse performance of laboratories and systematic efforts to improve it to attain excellence. This maintains the quality of service and reliability. The aim of this study was to implement PDCA cycle (Plan-Do-Check -Act) as a method for the CQI in the dairy laboratories. The PDCA methodology and some tools were used to identify critical problems that occur in the pre-analytical stage of ultra-high-temperature (UHT) milk samples and we have analyzed them and found the root causes of their occurrence. To resolve them, we presented proposals and implemented the best one. The most common problems that occured in the pre-analytical stage of UHT milk samples were the contamination. The results showed a reduction in the number of contaminated UHT milk samples to become (85) after they were (368). Moreover, the capability index (Cp) increased to (Cp = 1.07) from (Cp = 0.52). All of the above led to an increase in the efficiency and effectiveness of the processes in laboratory. The values increased (74.06 and 96.85 %) from (68.02% & 88. 95%) respectively. PDCA methodology is successfully applied in the dairy laboratory. The implementation of this methodology reduced the occurrence of errors and this has a great impact in increasing the processes capability. This positively affected on the efficiency and effectiveness of the laboratory.

Keywords: PDCA Cycle, Continuous Quality Improvement, dairy laboratories, Deming cycle, Iso17025.

AP-167

EFFECT OF SPRING MAIZE GENOTYPES HARVESTED AT DIFFERENT MATURITY STAGES ON YIELD, NUTRIENT COMPOSITION, FIBRE DIGESTIBILITY AND SILAGE FERMENTATION QUALITY

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ABSTRACTS:

Six spring maize genotypes, including Pioneer (P1574), Monsanto, QPM-200, QPM-300, ASS-9633 and local cultivar Azam, were used to evaluate the effect of cultivars and harvest maturity on yield, nutrient composition, fermentation quality and fibre digestibility (In-vitro). The seeds of each cultivar were sown in March 2016 in 8 replicate plots (5 m×10 m) according to randomized complete block design. Samples from each 1m long selected strip of two consecutive rows /plot were randomly selected and harvested at a targeted dry matter (DM) content of 25, 30, 35 and 45%. The harvested crop was weighed, chopped and a subsample was collected for chemical analysis. The remaining chopped material of each plot was ensiled in four replicates 1.5-litre laboratory silos. After three months of silage production, the silos were opened and analysed for nutrient composition as described by (Khan et al., 2015). The data was analysed with PROC- MIXED procedure of SAS. Results of the current study show that maize hybrid QPM-300 has a maximum yield in terms of DM (17.670 tons/hec), protein (1.410 tons/hec) and starch (5.267 tons/hec). After ensiling QPM-300 has a significantly higher concentration of protein (8.054 g/100gm), starch (28.90 gm/100 gm) and IVDMD (70.10%) at 35% dry matter and a higher level of NDF at Azam (47.12) variety. Harvest maturity had a significant effect on pH and NH3 (g N/kg D) but no differences were found among the cultivars. It is concluded that maize hybrid and harvest maturity both are markedly different from each other in terms of yield, composition, digestibility, and fermentation quality. QPM-300 was screen out as the best spring season hybrid at 35% harvest maturity.

Keywords: Genotypes, Harvest maturity, Nutrient composition, silage.

AP-168

SCREENING OF TRADITIONAL AND NOVEL SUMMER MAIZE CULTIVARS AT DIFFERENT HARVEST MATURITY FOR SILAGE PRODUCTION IN NORTHERN AREAS OF PAKISTAN

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ABSTRACT:

Six summer maize genotypes, including Pioneer (P30Y87), Monsanto, 36W34, QPM-300, ASS-9633, and local cultivar Afgoii, were used to evaluate the effect of cultivars and harvest maturity on dry matter yield, nutrient composition, fermentation quality and fibre digestibility (In-vitro).The seeds were sown in June 2016 in 8 replicate plots (5 m × 10 m) according to randomized complete block design. Samples from each 1m long selected strip of two consecutive rows/ plot were randomly selected and harvested at a targeted dry matter (DM) content of 25, 30, 35 and 45%. The harvested crops were weighed, chopped and a sub-sample was chosen for chemical analysis. The remaining chopped material of each plot was ensiled in four replicates in 1.5 litre laboratory silos. After three months of silage making process, the silos were opened and analysed as described by (Khan et al., 2015). The data was analysed with the PROC-MIXED procedure of SAS. Results of the current study show that maize hybrid P30Y87 has maximum yield in term of DM (19.200 tons/hec), protein (1.520) and starch (5.460 tons/hec). After ensiling P30Y87 has a significant higher concentration of protein (7.840 g/100gm), starch (29.80 gm/100gm) and IVDMD (69.40%) at 36% dry matter and higher level of NDF at Afgoii (46.60) variety. Harvest maturity had a significant effect on pH and NH 3 (g N/kg DM (need cconfirmation)) but not found among cultivars. It is concluded that maize hybrid and harvest maturity both have markedly differed from each other in terms of yield, composition, digestibility, and fermentation quality. P30Y87 was screen out best summer season hybrid at 35% harvest maturity.

Keywords: Genotypes, Harvest maturity, Silage, Nutrient composition.

FSE-169

MILK PRODUCTION AROUND KONYA CITY CENTRE AND ITS RELATION WITH REGION ENVIRONMENT

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ABSTRACT:

In recent years in Turkey, important developments in industrialization have been achieved, and an important part of the population continues to be employed in agriculture. Konya province is at the forefront in terms of agriculture and animal husbandry. Despite false livestock policies, Turkey is still one of the leading countries in the world in terms of animal numbers. In some of the dairy cattle businesses, intensive production methods are used, but in many regions, especially sheep and goats, animal husbandry is carried out with poor practices. However, especially in Eastern Anatolia, especially in the mountainous parts of our country, the potential for livestock is quite high. Supporting and expanding animal husbandry in Turkey will enable the protection of nature and ecosystem, increase the income level of small farmers, ensure the rural development, prevent the migration from the village to the city, and allow our people to be fed more healthily. Environmental conditions in milk production are very important. As environmental conditions, it is normal for shelter conditions to change relatively to animal type. Especially air pollution of environmental pollutants, the quality of water used in irrigation and the quality of soil in feed production areas are very important in terms of animal health and milk quality. Since Konya does not show homogeneity with respect to environmental quality, it is necessary to determine the region where the cigarette is produced and take it under registration. It is very important to investigate Konya milk production zones and the environmental characteristics of the region.

Keywords: Milk production Animal production, Environment, pollution

AP-170

INFLUENCE OF FLAXSEEDS ON RUMINAL FERMENTATION AND MILK PRODUCTION

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ABSTRACT

This study was conducted for defining the effect of flaxseeds seeds (whole / oil), on the rumen fermentation, milk production, composition and fatty acids profile in dairy goats. Fifteen lactating Saanen goats were divided randomly into three groups (n = 5) on a basal diet of concentrate feed mixture and fresh *Trifolium alexandrinum*at 50:50 on dry matter basis (Control) in addition to 25 g/head/d flaxseeds whole (FS) or 10 mL/head/d flaxseeds seeds oil (FO) in a complete randomized design. After dietary adaptation, milk was sampled every two weeks during 60 days of experimental period for chemical analysis. Rumen samples were taken at 0, 30 and 60 days of the experiment for pH, total volatile fatty acids (tVFA), and ammonia-N determination. Addition of FS decreased the ruminal pH($p = 0.012$), whereas FO and FS increased the tVFA ($p<0.001$) and acetate concentrations($p = 0.034$). Serum glucose observed to be increased ($p = 0.013$) in FO and FS goats vs Control diet. The FO and FS treated goats were having higher milk yield ($p = 0.005$) and a higher milk fat content ($p = 0.002$). Also, the FO increased the milk lactose content ($p = 0.027$) and improved the feed efficiency ($p = 0.034$) compared to the Control diet. Both FS and FO increased ($p<0.05$) the milk unsaturated fatty acids content especially for the conjugated linolenic acid (CLA) vs Control. Addition of FS and FO increased the ($p = 0.017$) C_{18}:$_3N_3$ fatty acid composition as compared to the Control diet. Data suggested that addition of FS or FO in any form to lactating goats ration had beneficial effects on milk yield and milk composition with higher milk content of healthy fatty acids (CLA and omega 3) content.

Keywords: Fatty Acid Profile, Goats, Milk, flaxseed, Rumen

FSE-171

DAIRY SECTOR IN YEMEN – A DRIVING FORCE FOR FOOD SECURITY

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ABSTRACT:

Agriculture is a one of the main sectors of the national economy of Yemen contributing about 17% of total Gross Domestic Production. Livestock contributes about 20 percent to agricultural GDP. In Yemen, milk production is one of the important animal based protein source for the local population. Milk is produced from camels, cows, goats and sheep. The ruminant population has been estimated over 21.2 million heads. The sheep population represented the largest share of this population with 9.7 million head accounting for 45.49%, while camels with 460 thousand animals accounted for 2.16%. In 2014, milk production estimated at 391 thousand tones accounted for 1.3% of the Western Asian production. Milk production in cattle, goats, sheep and camels represented 60.13%, 19. 20%, 16.97% and 3.71% of the Yemen milk production, respectively. This article highlights Yemen livestock production system, managerial strategies of milk sector and food security of produced milk and products. Specifically, it will be question to analyze the opportunities, weaknesses, and come up with new approaches of solutions to improve the competiveness of this sector in comparison to the developed countries.

Keywords: Animal production, Milk, Food security, opportunities, weakness, Republic of Yemen

FSE-172

TRAJECTORY OF WOMEN SEXUAL IMPEDIMENTS: A CONSTITUTIONAL PERSPECTIVE

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ABSTRACT:

In the wake of contemporary period the basic objective of the study was to explore the possibility of reforms for women in constitutional perspective. Recent revolutionary developments in the biological sciences have had a dramatic impact on the lives of women. The striking feature of the concept of human rights may be difficult to define but not possible to ignore. The theorists and the ideologues, the politicians or statesmen may squabble about the forms of government or the doctrine of statecraft, but they cannot repudiate the indefensibility of torment, brutality callous and degrading treatment, gender discrimination hunger, genocide, arbitrary arrests and detentions, and the like.

The study made a detailed and substantiated argument for mandatory reforms for women in Pakistan. The compatibility/incompatibility of women's sexual complication in the light of constitutional coverings has been analysed through feminist theoretical framework. The study has taken the constitutional vs. cultural diversity perspective and tried to bridge the gap of constitutional interpretation and critical role of human agency. Given the need, a study based on accessing the primary sources with the objective to bring argument in line with the actual constitutional application was conducted. The social and religious acquiescence for a double standard of morality or rather, gender specific chastity, manifests itself in many and varied ways. The study has focused the understanding of existing trajectory of women sexual impediment in Asian countries like Pakistan in constitutional scenario.

Keywords: constitution, gender, justice, sexual rights, Entrepreneurs' development, hygienic/Halal food production

FSE-173

POPULATION ESTIMATION AND THREATS TO INDIAN HARE (LEPUSNIGRICOLLIS) IN RAKH-SARDARAN GAME RESERVE, DISTRICT HARIPUR

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ABSTRACT:

Indian hare (*Lepus nigricollis*) belongs to Order Lagomopha and family Leporidae. It is also called black napped hare due to the patch of black fur that runs along the nape of the neck. In Pakistan, Indian hare is found in crop lands throughout the Indus basin and in extensive sand hill desert, uphills in to low rocky hills in regions west of the Indus as well as scrub forest. A research study on Population Estimation and threats to Indian hare was conducted in Rakh Sardaran Game Reserve, District Haripur which is situated in Hazara division. The boundaries of Game Reserve are notified by 1986 that declared the Rakh Sardaran Game Reserve has an area of 4200 ha. A total of 98 Indian hare were observed in 15 visits during September 2015 to May 2016. Reconnaissance survey in the habitat of Indian hare was made and potential sites (5) of habitat were selected for further study. Direct (line transect) and indirect method (interview questionnaire) were used in order to check presence of Indian hare in Rakh Sardaran. One transect of different length was run in each side site. Population density of Indian hare was recorded as 6.533/ Km2. Male ratio (63) was higher as compare to females (35). Population density of Indian hare was observed maximum at Chamba pend (30) due to less human disturbance, good quality cover and vegetation. Least population density was observed in Morhipirbakhsh (13). Threats to population of Indian hare were analyzed by constructing questionnaire which was filled by Wildlife staff (40) and local community (60). The maximum threats to population and habitat were deforestation and Poaching and least threat was recorded as forest fire.

Keywords: Indian Hare, rakh-sardaran, Lepusnigricollis,population density, Pakistan

ED-174

EFFECTS OF THE DIETS WITH DIFFERENT LEVELS OF PROSO MILLET (*PANICUMMILIACEUM*) ON THE PERFORMANCE, EGG QUALITY, HATCHABILITY AND BONE BIOMECHANIC PROPERTIES OF BREEDING JAPANESE QUAILS

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ABSTRACT:

An experiment was conducted for 28 days periods with breeding Japanese quails, to determine the effects of diets containing different levels (0, 15.2, 34.4 and 50.6%) of proso (white) millet (*Panicummiliaceum*) on the performance, exterior and interior quality of egg, reproductive performance and biomechanics properties. In the experiment, proso millet substituted at 0, 30, 75 and 100% levels (1st, control diet based corn; 2nd, 3rd and 4th treatments, respectively) instead of corn in the basal diet, and a total of one hundred and twenty quails (female: male ratio, 2:1) at six weeks of age was used. Each diet was tested five replicate groups of six quails, in completely randomized design. All diets were formulated to be similar in nutrient content and to meet or exceed the requirements recommended by NRC (1994).

Feeding millet in the diet at the expense of corn did not significantly influence, hen-day egg production, egg weight, egg mass, feed intake, feed efficiency; egg surface area, shape index, eggshell weight and shell percentage, eggshell thickness and shell index, specific gravity, defective egg ratio; haugh unit(%), white and yolk index and yolk color; chick weights at hatching, fertility, hatchability of eggs set (%), hatchability of fertile eggs (%) and embryonic mortalities during or at the end of the over experimental period, and final body weight, body weight gain, livability, and ultimate shear force, shear stress and fructure energy of bone. Average hen day egg production, egg weight, feed intake and feed efficiency (feed, g/egg mass, g) for the 1st, 2nd, 3rd and 4th treatments (diets) at the all experiment period were 83.3±3.4, 91.6±1.5, 89.25±4.6, and 89.4±3.1 %; 11.2±0.3 , 11.4±0.3, 11.7±0.26 and 11.6±0.4 g; 26.8±0.98, 28.0±1.1, 28.2±0.5 and 27.3±0.9 g/ day; 2.68±0.13, 2.80±0.10, 2.74±0.11 and 2.68±0.12, respectively. Shell percentage, specific gravity, haugh unit, yolk color score, fertility and hatchability of eggs set at the over experiment period were 8.0±0.12, 7.8±0.22, 7.7±0.15 and 7.7±0.16 %; 1.07±0.0007, 1.06±0.0007, 1.07±0.0008 and 1.07±0.0009 g/cm3; 86.2±0.8, 85.9±0.9, 84.6±0.8 and 86.0±1.0(%) ; 3.9±0.2, 3.6±0.1, 3.6±0.2 and 3.5±0.8; 95.7±3.7, 98.0±1.3, 99.1±0.6 and 96.5±1.8%; 88.2±3.1, 91.5±1.4, 92.9±2.5, and 94.5±3.2 %; and shear stress and fructure energy of bone for the four treatments at the end of the experiment were 51.3±2.5, 52.4±3.3, 54.6±3.7 and 55.8±3.9 N/mm2; 83.6±11.0, 86.4±13.6, 84.7±7.4 and 103.8±13.1 N-mm; respectively. These results indicate that proso millet can be used to substitute for corn in the diets of breeding Japanese quails without adverse effect on yellow color.

Keywords: Proso Millet, breeding Japanese quails, fertility, hatchability, egg quality

FSE-175

EVALUATION OF LIVESTOCK PRODUCTION IN ÇELEBILER VILLAGE WITH SPECIAL EMPHASIS ON PASTURE

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ABSTRACT:

This study was conducted to determine grazing habits and feed calendars of large ruminants in Çelebiler village of Sivas to assess the major constraints facing livestock production with special emphasis on rangeland use. A survey was conducted to assess grazing habits and feed calendars of large ruminants in the target village. Nineteen farmers in Çelebiler village were selected on the basis of interviews with the local leaders of villages. A questionnaire was performed to collect monthly data on grazing habits and feed calendars of animals on a year basis. Pasture mass (Kg/da DM) was estimated by using the cutting technique once a month. Herbage DM yield (HDMY) (kg/ha DM) was calculated using the average DM weight of the samples. Pasture samples were analyzed for DM, CA, CP, ADF, NDF and Hemicellulose (Hcel), ME, NEL, and non-fiber carbohydrates (NFC) were calculated. Stocking rate was calculated as in terms of hectares per large animal unit (LAU) per time unit. During hand feeding period, straw was accounted for 1/3 of the diet of animals therefore winter feeding was mostly based on cereal straw. It is obvious that this limits energy and protein content and also reduces digestibility of ration. During hand feeding period, milk yield of the cows was calculated as 10 kilos per day, which was very low for cross breed cattle. During grazing period, available forage from grassland was not enough to cover the needs of cattle in this period. Therefore, stocking rate of pastures in Çelebiler village was 1.8 times greater than actual capacity.

Keywords: cattle, pasture, feed calendar, grazing

FSE-176

USE OF PROPOLIS IN RUMINANT NUTRITION - (REVIEW)

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ABSTRACT:

There is an increasing interest to use the natural products that have no issues to public health as feed additives for solving the problems in animal nutrition and livestock production. The natural products include probiotics, prebiotics, enzymes, organic acids and secondary plant metabolites. Propolis, or bee glue; a resinous material collected by worker bees from the leaf buds of numerous plant species enriched with bee enzymatic secretions and wax showed a variety of biological and pharmacological properties. In particular, propolis has shown anti-bacterial activity. Thus, several researchers investigated it as a natural additive in ruminant nutrition. In vivo experiments showed that propolis was effective in increasing dry matter and nutrient digestibility in buffaloes and increasing the protein flow into the small intestine in cattle. Propolisalso decreased the rumen ciliate protozoal populations and decreased the ammonia production, increases the digestion of hay and increased the propionate production in in-vitro rumen incubation. Thus propolis can prevent environmental pollution by reducing methane production and provide more effective utilization of feed energy. It was also shown that propolis extract had a positive effect on the final weight, hot carcass weight and average daily weight gain in feedlot-finished bulls. Propoliswas also effective in increasing milk antioxidant capacity and decreasing saturated fatty acid level and n6/n3 fatty acid rate of milk and increasing milk Conjugated Linoleic Acid (CLA) level. Propolis ethanol extract increasesthe level of linoleic acid (C18: 2 n-6), thus indicating a significant potential for increasing the quality of animal products. In this review effect of propolis as feed additives in ruminant nutrition will be explained.

Keywords: Propolis, ruminant, nutrition, feed additives

FSE-177

AN ALTERNATİVE PROTEİN SOURCE-INSECT İN ANİMAL NUTRİTİON – (REVİEW)

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ABSTRACT:

The high cost of using protein sources such as soybean meals in animal diets has led nutritionists to investigate alternative products such as insects. Due to the fact that it is cheaper, alternative approaches are needed which are not used in human nutrition in providing protein needs of animals. Insects can be considered as an alternative protein source to meet protein requirements in farm animals. This may be important as an alternative line of business, as well as in the assessment of waste and the sustainable livestock production. The feeding studies have confirmed that the palatability of the insect meals containing diets is good and that these alternate feed resources can replace 25-100 % soymeal and fishmeal in the diets depending on the animal species. The nutrient utilization and growth studies in ruminants require a substantial amount of insect meal, and their limited availability allows their evaluation and use in fish or poultry diets. Most feeding studies with diets containing insect meals have been conducted on fish and poultry, followed by pigs and then ruminant animals Studies have shown that crude protein content of insects can vary from species to species, and on average, they have 40-60% crude protein content. The lipid contents of these alternate protein sources are also high (up to 36% oil). Unsaturated fatty acid concentrations are high in housefly maggot meal, mealworm and house cricket (60–70%), while their concentrations in black soldier fly larvae are lowest (19–37%). The fact that amino acid contents are close to fish meal is also an important advantage. However, most insect meals are deficient in Ca and its supplementation is also required, especially in the diets of growing animals and laying hens. In our review, the studies on the use of insects as an alternative protein source in the feeding of farm animals will be explained.

Keywords: Insect, animal nutrition, protein source, sustainability.

BRM-178

ANTIMICROBIAL RESISTANCE IN THE FOOD CHAIN IN DEVELOPING COUNTRIES AND PUBLIC HEALTH CONSEQUENCES: A CALL FOR ACTION

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ABSTRACT:

Antimicrobial resistance is one of the biggest challenges facing global public health and food animal production. The resistant bacteria emerged in food animals could potentially transfer to humans via direct animal contact or food consumption and could cause a variety of infections. The antimicrobial resistance is a general concern for the whole world and specific concern for the developing countries where infections due to resistance bacteria contribute significantly to the overall diseases in animals as well as in public ultimately leads to economic burden and excess number of deaths. Each year, an estimated 23,000 deaths in the United States has been reported due to resistant bacteria. Similarly, in Europe, annual 25,000 die due to antibiotic resistance. The estimate of causality is even higher for developing countries with estimated excess deaths are five times larger compared to the developed countries. The emergence of antimicrobial resistance is a complex problem driven by numerous interconnected factors, many of which are linked to the use of antimicrobials in animals and humans. Other contributing factors include poverty, inadequate resources, lack of monitoring and surveillance, policy and regulatory issues, poor access to quality antibiotics, inaccessible proper health and diagnostic facilities, high illiteracy rate, ignorance, lack of knowledge and poor perception towards antimicrobial usage. The problem of antimicrobial resistance is not a local or a country-specific issue. Due to globalisation, we cannot limit human travelling, import and export of animals and food products between different countries; therefore, the emergence of resistance in one country could easily and swiftly transfer to another country.

It is prime important to develop and strengthen the antimicrobial surveillance systems in developing countries. Efforts are required at the international level to map existing networks in under-resourced countries and chain them up together with reliable and sustainable ways of communication systems. Surveillance systems can be built in those countries on lessons learned from the development of existing successful surveillance systems like EARSS network, a surveillance system that monitors antimicrobial drug resistance in Europe, or DANMAP, the Danish Programme for surveillance of antimicrobial consumption and resistance in bacteria from animals, food and humans.

Keywords: Antimicrobial resistance, super bugs, antibiotics, food safety

MT-179

DETERMINATION OF THE EFFECTS OF THE ADDITION OF HYSSOP POWDER ON SOME QUALITY PROPERTIES OF BEEF PATTIES

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ABSTRACT:

The study aims to prevent the inhibition and/or development of microorganisms and to slow down and/or prevent lipid oxidation by taking advantage of the antimicrobial and antioxidant effects of the hyssop powder (HP) added to the patties formulation. In addition, the antimicrobial and antioxidant properties of these foods are expected to have positive effects on other quality characteristics of the product. A useful product for health will be developed by improving the taste formation and benefiting from the positive effects of the hyssop powder on health. In this study, HP at different rates (%0, %0.1,%0.25, %0.50, %1.00, %2.50) was added to patties and the effects of addition HP on water activity (aw), moisture content, pH, sensory properties, colour and lipid stability in beef meat patties were determined. The patties were stored in the refrigerator at 4°C for 5 days. With addition HP,amount of moisture is reduced to a certain level. However, no change in water activity was observed (P>0.05). In sensory analysis results, 0.1% and 0.50% added hyssop powder, got very high scores in terms of taste and aroma (7 and above). It was determined that the antioxidant effect of hyssop powder was also found in the results of Thiobartituric acid (TBA) analysis performed on the 5th day. The TBA values were 2.12 in the control group, but decreased to 0.90- 0.71in patties added 0,50%, 1,00% HP, respectively.
As a result, taking antioxidant effect and sensory properties into account, it can be recommended to add 0.5% of hyssop to the patties.
Keywords: Hyssop powder, patties, lipid oxidation

BRM-180

FROM DAIRY SCIENCE PARK TO 'ONE HEALTH' SECURITY: CHALLENGES & EXPECTATIONS FOR GOVERNMENT-ACADEMIA-INDUSTRY IN KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT:

Dairy Science Park (DSP) emerged in 2011 as a society at the Agriculture University Peshawar, Pakistan. The society is registered with the Provincial government of KP and is in accordance with SDG Action 9671 of the UN. The DSP mission is to Support the people of KPK, FATA and Northern Areas of Pakistan through entrepreneurship for Youth, provision and export of hygienic food in addition to ensuring biosafety and biosecurity in the regions.DSP strives for one health security through leadership and guidance on policies & practices which impact biosafety and biosecurity in clinical, diagnostic & research labs at provincial level. It focuses on the environment, livestock and the human capital and strongly advocates for a trust-based relationship between government, academia and industry. The interrelation between government, academia and industry provides an environment where developmental programs can flourish. A vibrant industry holds real promise for significant economic and social benefits and to fulfill these promises support of the academia is required. The academia should emphasize on the academic and scientific quality of the programs for innovations and competitiveness required by industry. The government with political will has to extend continuous support and to frame and implement policies for keeping the triangular relation interdependent.

In this talk efforts are made to describe DSP journey from its emergence to this day highlighting its mission, and achievements since 2011. The systematic approach towards 'one health' security is focused. Challenges and expectation for government, academia and industry in Khyber Pakhtunkhwa province, Pakistan are discussed. Strategies for close links and cooperation between public and private sector have been suggested

Keywords: Dairy Science Park, One Health, biosafety, biosecurity, livestock, challenges

FSE-181

WHOLE GENOME SEQUENCING OF CATTLE BREEDS FROM PAKISTAN AND THEIR USE IN GENOMIC SELECTION FOR ENHANCING MILK AND MEAT PRODUCTION

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ABSTRACT

Livestock sector contributes more than 50% of agriculture in Pakistan and sustains life in non-irrigated areas as well as irrigated areas. Therefore, improvement in livestock sector can contribute significantly in poverty reduction in vulnerable areas. Moreover, improved milk and meat production can help in overcoming problem of stunting and malnutrition. The success of genome-wide association studies (GWAS) based on genotyping for quantitative trait loci (QTL) identification has encouraged marker-assisted selection in model agricultural species. Most of the recent studies have been concentrated on Bos taurus cattle and far more SNPs are deposited in dbsnp for *Bos taurus* compared to Bos indicus. This results in a biased HD-SNP-arrays more towards *Bos taurus*. Thus, SNP-array is in urgent need to include many more validated SNPs for *Bos indicus* belonging to diverse geographical regions in Pakistan. We started work on whole genome sequencing of 12 cattle breeds of Pakistan in collaboration of local research institutes and Beijing Genomic Institute (BGI), China. The genomic sequence data has been obtained and will be presented. The whole genome sequence analysis of the best milking, disease resistant and tropically adapted *Bos indicus* Sahiwal breed, and using massively parallel high-throughput sequencing technology. Sahiwal breed is the most populated and unexplored cattle in the tropical region of Pakistan. The genome of a proven Sahiwal bull was sequenced to approximately 30xdepth, where 99.9% and 95.01% of the reference genome (UMD 3.1) was covered by at least 1 and 5 reads, respectively. In total, 3,104,573 SNPs and 92968 indels were identified, of which 414,759 and 88239 were previously unknown, respectively. Most of the SNPs (2308651) were located in non-coding regions. A total of 11,620 SNPs causing missense mutations were detected in 6398 genes, which could potentially contribute to variation in economically important. A total of 629 loss of function (LoF) variants were revealed in 544 protein-coding genes. The majority of LoF variants were caused by frame-shift variants. This study provides a valuable resource for further investigations of the genetic mechanisms underlying traits of interest in cattle, and for the development of improved and unbiased genomics-based breeding tools. A scheme for application of genome sequencing data in genomic selection of local breeds for improving milk and meat production is also underway.

Keywords: genome sequencing, agriculture, livestock, *Bos indicus*, Sahiwal breed

AP-182

EVALUATING THE SUNFLOWER HARVEST WASTES AS A SILAGE

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ABSTRACT:

This study was carried out to investigate the possibility of sunflower leftovers after harvest in the field as silage. In order to compare the silage quality, maize crops (MC) and sunflower stalks wastes (SW) were chopped 3 to 5 cm long stalks by shredding machine and were ensiled for 60 days in1 kg capacity vacuum bags. In the study, the pH, dry matter (DM), crude protein (CP), crude ash (CA), acid detergent fiber (ADF), neutral detergent fiber (NDF) content and Fleig points were determined.
In the silage cultivated, all values were found significant (P <0.05). DM (23.73-16.16, MC-SW respectively), (P<0.01) pH value (3.63-3.81 MC-SW respectively) (P<0.05), CP ratio (6.73-9.32 MC-SW respectively) (P<0.05), CA ratio (7.81-12.5 MC-SW respectively) (P<0.01), ADF ratio (29.80-27.88 MC-SW respectively) (P<0.05), NDF ratio (48.21-27.2 MC-SW respectively) (P<0.01) ve FP value (107.27-85.45 MC-SW respectively) (P<0.01) were found. As a result, it has been determined that some nutrient parameters are different according to corn silage in silage made from sunflower wastes, but they are in "very good quality" class according to fleig score which is an important quality classification. In this way, the waste product can be used effectively as silage.
Keywords: Sunflower waste, silage

AP-183

CHEMICAL AND NUTRITIONAL CHANGES IN SORGHUM SILAGE ASSOCIATED WITH BARLEY GRAIN AND MOLASSES SUPPLEMENTATIONS

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ABSTRACT

This study was conducted to determine the effect of different energy sources on sorghum silage quality. The sorghum Sudan grass was harvested and chopped then silage additives were mixed and stored in glass jars with 5 replicates for 90 d. The treatments were as follows: Control (C, no additive), 2.5% molasses (M); 2.5% barley grain (B) of fresh material; molasses and barley mixture (MB). There were no significant differences between the groups in terms of crude ash (CA), propionic acid (PA) and butyric acid (BA). In the MB group, the dry matter (DM) and acetic acid (AA) were lower than those of other groups ($P<0.01$). Silage pH value in the M and MB group were higher than control and B group. In the M and MB groups, crude protein (CP) ratio was higher than the other groups. Silages Fleig point (FP) values in the MB group were higher than the other groups. In conclusion, the barley and molasses addition to sorghum grass before ensiling may positively affect different silage quality characteristics.

Keywords: sorghum, molasses, barley, silage quality

AP-184

GENETIC INVESTMENT INDAIRYBUFFALO: A CASE STUDY FROM EGYPT

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ABSTRACT

The limited supply of water resources and agricultural land, as well as the absence of natural range land for grazing in Egypt imposed the vertical expansion in Egyptian livestock as the only feasible approach for development, particularly, for milk production. This is due to an apparent deficit in feed supply for horizontal expansion in dairy animals, in addition to the competition between the human food demand and livestock feed requirements for the given cultivated grain crops. On the other hand, there are several criteria that confirmed the comparative and competitive advantages of the Egyptian economy in milk production from the Egyptian river buffalo strain .However; the milk yield of the domestic buffalo is relatively low. Therefore, to raise the milk yield, via genetic investment is the approach towards increasing the domestic supply of milk. The study used a field sample survey data from A.I. centers to apply a designed mathematical investment model covering 5calving seasons of inseminated dam's daughters to assess the impact of a of the economic variables and reproductive traits on the investment efficiency, in terms of the economic rate of return (ERR) resulted from a proposed genetic improvement of the domestic dairy buffaloes using an artificial insemination (A.I).

The study estimated the Predicted milk difference (PMD) of the semen of the selected local buffalo bulls. It reached about 425 kg of milk per season. The estimated mostprobablelevelofERRwas19.65% was feasible as it surpassed the interest rate for dairy cattle loans (16.25%) and the inflation rate in milk price (10.5%). Improvements of the reproductive performance traits of dairy buffalo, i.e., to reach 10% less number of services for conception, age at first calving and service period, would increase the (ERR)by 8.1%. However, if the proposed program faced a worse economic condition, as 10%increaseinthe feed costs and the price per one A.I. service, associated with 10% decrease in milk price, the ERR would decrease by 15.8%. Therefore, the sensitivity of the genetic investment efficiency for economic variables is two folds such sensitivity towards the reproductive traits. Therefore, much concern should be given to improve the performance of the Egyptian reproductive traits to reach sustainable development via genetic investment.

Keywords: Predicted Milk difference, Predicted Mature, Economic Rate of Return, Sensitivity analysis

ED-185

ENTERPRISE STRUCTURE OF WATER BUFFALO BREEDING IN TURKEY

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ABSTRACT

Water Buffalo grown in Turkey is origins in the lower group of river water buffalo and named as Anatolian Water Buffalo. Generally in Turkey, color feature of the water buffaloes is black and they have backward curved, arc-like horns. Their lactation period is 180-280 days; milk yield is 800-1100 kg per lactation, while the mature female water buffalo is around 500 kg in Turkey. While the number of water buffalo in Turkey was 1.117.000 heads in 1970, it decreased to 85.000 heads in 2010. In recent years, this number has reached 142.000 heads thanks to government incentives.

The breeding of water buffaloes are mostly in the Black Sea, Marmara, Eastern Anatolia and Central Anatolian Regions in Turkey respectively. The Central Association of Breeding Water Buffalo Breeders of Turkey has 25 provincial associations' members. 5 provinces with the highest number of buffaloes are respectively; Samsun, Diyarbakir, Istanbul, Bitlis and Tokat. Diyarbakir is the province with 1.225 enterprises with the highest number of enterprises. The total number of buffalo enterprises in Turkey is 4.871 and the average numbers of animals per establishment are 16.9 in Association of Breeding Water Buffalo Breeders of Turkey members. This study showed the structure and current situation of Water Buffalo enterprises in Turkey

Keywords: Anatolian Water Buffalo, Enterprise, Water Buffalo Husbandry in Turkey

AH-186

HIGH FAT DIET INDUCED METABOLIC DISORDER FOLLOW OXIDATIVE STRESS IN DROSOPHILA MELANOGASTER

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ABSTRACT

Different diets have a great impact on our health. HFD (High fat diet) have been linked to epidemic development of various metabolic disorders. Manifestation of metabolic disorders in the gut may be causally associated with several chronic diseases such as Infectious bursal disease (IBD), insulin resistance and ultimately with cancer. Thus, the effects of HFD on various aspects of the gut structure and physiology were studied using the fruit fly Drosophila melanogaster as a model. Most importantly, it activates regeneration of the intestinal epithelium. This nutritional intervention induced stem cells to divide and produce enteroblasts with a small-time delay. These enteroblasts develop into enterocytes and enteroendorine cells. The structure of the intestine is different following HFD, as the number of enteroendocrine cells was increased for longer periods indicating modified hormonal system in response to this intervention.Structural changes in the intestine were seen even after a short period of HFD. Apparently, the induction is triggered by HFD mediated expressioj of the cytokine upd3. This induction appears to be meditaed via the JNK-pathway. This induction is independent on the microbiota, as gnotobiotic animals show the same effect. Nevertheless, HFD has a strong impact on the structure of the microbiota, meaning that the number of bacteria is much higher following HFD. In addition to the JNK-Upd3 axis, other signaling pathways are also activated in response to HFD. Ca2+-signaling, indicated by the CaLexA system was chronically increased. Moreover, the stress sensing pathway Nrf2 as well as the Notch-pathway were activated in enterocytes in response to HFD. Taken together, HFD has a major impact on various aspects of the intestinal physiology, including a long lasting modification of the intestinal hormonal system.

Keywords: HFD, Ca2+-signaling, cytokine upd3, enteroblasts, entroendocrine

DT-187

PRODUCTION AND PROCESSING OF MILK- ENVIROMENTAL IMPACT ASSESSMENT (EIA)

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ABSTRACT:

Environmental Impact Assessment (EIA) is one of the most important tools for sustainable development. It has been implemented in our country since 1993 as an important tool applied for determination of technological alternatives with the selected location in the prevention of the effects of projects on the environment. Milk and dairy production facilities are also included in the EIA evaluation. Pasteurized and UHT milk, yogurt, cheese, ice cream, butter and cream production facilities are the fabrication productions of milk and dairy production facilities. Operations generally include processes such as homogenization, pasteurization, condensation, cheese, cream, butter, milk, yoghurt, ayran, milk powder and ice cream production. As the characteristics of the waste waters resulting from these operations may be different from each other, especially small plants can release waste water with different features. Also milk processing sector does not release much solid waste in addition of the packaging material. While significant quantities of liquid waste are produced during production, these liquid wastes can be used in other areas instead of being sent to garbage. Whey is the most important and the most studied product of the dairy sector. These isolates contain large quantities of organic matter (lactose and proteins) and minerals. Yogurt is a good source of lactic acid used in food, cosmetic and pharmaceutical industries due to its water retaining and emulsifying properties. Yet another waste is chilled water. Chilled water is usually produced in a controlled manner. Whey recycled is frequently used in the production of whey protein (WPC) during controlled operation. Lactic acid can be produced from the pasteurized water. Whey can produces single cell proteins and biosurfactants. Cheese production resulting cheese curd formed underground water, and used in confectionery cheese whey powder is used in the production. The cheese waters that form in the factories must be converted to these products and absolutely no discharge to the sewage system. Whey should be stored in chrome nickel tanks in the factories. The waters in the waste water regulation can be reused if they do not need purification or they can be included in the system by water treatment.

Keywords: EIA, whey, waste management

DT-188

THE INGREDIENT OF ROYAL JELLY

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ABSTRACT:

Royal Jelly, which is produced in order to feed mature queen bee and young larvae by young worker bees, is excreted by hypopharyngeal gland (generally called as pharyngeal gland). This important nutrient is also secreted by hypopharyngeal gland of young worker bees that is in hive and eats a large quantity of pollen and honey. Queen bee and larvae are fed directly from royal jelly without being stored after secretion. On account of this, royal jelly is not the product of traditional apiculture. Royal jelly is quite fluent and homogeneous substance with being in the dough structure. It has a light beige and yellowish, sharp phenolic smell and characteristic sour taste. The composition of royal jelly varies according to the climatic conditions of the region where it is produced. Generally, when we look at the composition, the main change can be in free fatty acids. The composition of royal jelly generally includes (57-70% water, 17-45% protein, 18-52% sugar, 3.5-19% fat and 2-3% of minerals) of its dry weight. On average 73.9% of nitrogenous substances, there are six big proteins and four glycoproteins. For human being there are essential amino acids and all of 29 amino acids and their derivatives are included in royal jelly. The most important ones are aspartic acid and glutamic acid. Proline and lysine are free amino acids. There are several enzymes including glucose oxidase, phosphatase and cholinesterase. Sugars, as in honey, generally are composed of fructose and glucose in similar and constant proportions. The content of sucrose varies from one major sample to another. Other sugars found in lesser amounts are maltose, trihalose, melibiose, ribose and erlose. The main fatty acids are acid 10 hydroxy-2-decanoic acid and about 1.9%, followed by 10 equivalents of saturated hydroxydeconoic acid. In addition to free fatty acids, lipid fractions include some non-saponifiable fractions of hydrocarbons similar to neutral lipids, sterols (including cholesterol) and wax extracts.The total ash content of bee spring is 1% of wet weight or 2-3% of dry weight.The most commonly found minerals are Ca, Na, Zn, Fe, Cu and Mn, with the most common being K; It contains Vitamin C, Vitamin E, Vitamin A, Vitamin D. Royal jelly has a rich composition with care.
Keywords: Royal Jelly, honey, Ingredient

DT-189

GEOGRAPHIC MAPPING OF REGISTERED CHEESE IN TURKEY

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ABSTRACT:

Products covered by geographical indications are products that are wholly or at least connected to a zone where a boundary, such as a region, town, village, cityorbasin, can be clearly drawn. Turkey, with its geographical location and characteristics, has also a great potential for rooted culture and geographical signs. The first attempts at registration in Turkey date back to the 19th century. The year of 1995 it has been adopted with the application of "Geographical Signs" with the Decree Law No. 555 and it has been mentioned as the official institution related to the registration rights of Turkish Patent Institute. According to the Turkish Statistical Institute (TURKSTAT), January 2016 production of cow's cheese was 50 thousand 945 tons while production of 469 tons of cheese from sheep, goat, buffalo and mixed milk. More than 50 kinds of cheese are produced in Turkey, the most popular ones are White, Kasar and Tulum cheese. Cheese, which has a registered geographical mark registered in Turkey; Diyarbakır Knitted Cheese, Edirne White Cheese, Erzurum Civil Cheese, Erzurum Moldy Civil Cheese (Göğermiş Cheese), Erzincan Tulum Cheese, Ezine Cheeseand Kars Kaşarı. While taking the registered geographical indication certificate in the cheese, specifications such as the definition of the product, the production area, the production method, the distinguishing features of the product, the usage form, the information about the product name and the mark of origin. Currently, we have 17 cheese varieties in the registration phase in Turkey.
Keywords: Proprietary Geographical Sign, Cheese, Geographical Marking

ED-190

USAGE OF OZONE IN FOOD PROCESSING

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ABSTRACT

Ozone has become increasingly important in the food industry because it has a high oxidation potential. It oxidizes and penetrates bacterial cell walls thereby reacting with and destroying essential components. It is effective against a wide range of microorganisms, permitted for use in food treatment, storage, and food processing by U.S. FDA. It is becoming a popular alternative to the traditional antimicrobial agents such as chlorine, chlorine dioxide, and organic acids, because it spontaneously decomposes to oxygen leaving no residue. Several ozone applications have been achieved including drinking water treatment, surface treatment of equipment, packaging materials, and foods for safety and preservation. Ozone works well against bacterial cells, spores, parasites, viruses, and fungi at low concentrations unless food products' surface structure has suitable medium for suspended or embedded microorganisms. Besides the surface smoothness, treatment technique, presence of organic materials, pH, and water activity are other factors necessary for antimicrobial efficacy of ozone applications. Ozone may affect the quality and nutrition of foods due to its strong oxidizing property. It had minor effect on anthocyanin content of blueberries and strawberries. Ascorbic acid increased in spinach and pumpkin leaves with ozone treatment, however adverse effect was determined in broccoli florets. In addition, ozone may cause color loss due to its bleaching effect. Ozone has been used in many developed countries and it is reasonably economical for long-term applications, however, further research is required in new applications to utilize unique features of ozone.

Keywords: Ozone, high oxidation, antimicrobial agents,

ED-191

THE IMPORTANCE OF COLORSTRUM ON NEONATE DEVELOPMENT IN RUMINANTS

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ABSTRACT

Colostrum is a life elixir which is produced by mammary glands within 2-3 days following birth and contains immune substances besides nutrients for neonate. It is stated that if neonate organism do not take colostrum within the first 6 hours following birth, there will be a delay in the establishment of the mother-neonate relationship, retreat of growing performance and an increase in mortality rates. It is suggested that neonate play a vital role in the regulation of both the digestive system and the body cell division, which in this context forms the basis of programming for the later stages of life, due to the properties of the colostrum in the first few days. In this review, the importance of the colostrum will be emphasized once again in the recent studies.

Keywords: Colostrum, immune resistance, growth performance, neonate, survivability

ED-192

COMPARISON OF FREEZE-DRYING AND SPRAY-DRYING TECHNOLOGIES IN FOOD DRYING METHODS

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ABSTRACTS:

Drying of foods is a unit operation that dates back to ancient times and continues to evolve under ever-changing technological advancements, resulting in reduced energy usage and improved quality of the final product. Drying enables the design of new product formulations and at the same time, extends the shelf life of fruits and vegetables. It is not possible to claim that a single drying method will be sufficient to meet the desired quality and drying economics of all food products; therefore, different drying methods with properly selected drying parameters should be applied to different foodstuffs. Drying is a process in which microorganisms and chemical reactions that cause deterioration are stopped or slowed down. Drying technology consists of microwave drying, freeze drying, infrared drying and extrusion technology in addition to kiln dryers, tunnel dryers, spray dryers, drill dryers, roller dryers. It should be considered during all applications that the main purpose of the drying process is not to dry faster but to obtain a better quality product. For this reason, in recent years, drying process can be used together with drying methods for reasons such as keeping quality loss as low as possible, increasing quality expectations in the final product, energy efficiency. It is an important parameter to keep the loss of quality as low as possible during the drying process in recent years. For reasons such as upgrading the quality expectations in the final product, energy efficiency, etc., the ones suitable for drying methods can be used together. In this study, information on the comparison of freeze drying and spray drying technologies from food drying methods will be given.

Keywords: Food drying, freeze drying, spray drying

FSE-193

PROBLEMS AND SOLUTION PROPOSALS FOR AGRICULTURAL COOPERATIVE MEMBERS IN AKSARAY PROVINCE

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ABSTRACT:

Research theme of this work is agricultural cooperatives which are operating in Aksaray province. From this point of view, it was aimed to provide a general evaluation of agriculture cooperatives in Aksaray province and to present solution proposals for the problems they encountered by examining the structure, types, locations in the country economy and contributions of the cooperatives operations. In this study, ideas on the proposals for solutions will be tried to be presented on the operation of the agricultural cooperatives in Aksaray and the problems of the partners connected to these agricultural cooperatives. On the other hand, it was aimed to identify the sustainable and successful ones of agricultural cooperatives. Thus, asking the questions of why the unsuccessful ones failed, and taking them to the solution path was chosen as the main objective.
Keywords: agricultural cooperatives, Aksaray province, sustainable

FSE-194

PROMOTING EFFECTIVE COMMUNITY MEDIA SERVICES FOR GENDER EQUALITY AWARENESS FOR ENHANCED AGRICULTURE AND FOOD SECURITY EAST AFRICA

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ABSTRACT:

Enhancing community media capacity can strengthen gender mainstreaming for better agricultural outputs for sustainable food policy in Africa. Universities have a critical role to spur the linkages among the private sector, governments, civil society organisations (CSOS), local communities, households, and individuals to boost agricultural productivity. The objectives of this study were to explain the::issues in gender mainstreaming for better agricultural productivity; role of community radio in developing gender mainstreaming outreach for food policy; national and East African Community (EAC) food and nutrition policy strategies, and the impacts of climate change and variability on local communities' agricultural outputs in view of the SG 2 targets and indicators in the EAC sub-region; assess the EAC climate policy regarding adaptation and mitigation priority areas for agriculture; and promote sustainable agriculture. to end hunger, achieve food security, improved nutrition, and promote sustainable agriculture. This review involved relevant searchers from internet, national policies, programmes, projects and national action plans. The data obtained were summarised to inform this paper. Gender equality is vital for achieving strategic gender needs in a continent which is struggling to achieve the SDG 5 targets. Policies which are gender sensitive will accelerate prospects for the attainment of the SDG 2. Gender equity campaigns involve creating, raising, and sustaining positive behaviour change. Gender mainstreaming research can deliver effective public campaigns for the much needed better national agricultural productivity and production outputs. There are still multiple cases of unresolved basic policy, research, information, innovations, funding, and north-south gaps. Women contribute to the bulk of the household food security status in Uganda and across Africa. Gender equality and equity mainstreaming is vital for sustainable agriculture in East Africa for better family and local community livelihoods.

Keywords: Agriculture, gender equality mainstreaming, media, policy, SDGs, productivity.

BRM-195

EFFECTS ON HUMAN HEALTH OF PHYTOCHEMICAS USED AS FUNCTIONAL FOOD

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ABSTRACT:

Many new food products have begun to be developed because of consumers demand food containing functional ingredients in food groups. With the development of healthy nutrition in the world, researchers have focused on functional foods and functional components. There are many reasons for increase in the consumption of functional foods because of the improvement of living standards, the increased cost of health services and the desire to increase the quality of life. Functional foods; is defined as food or food components that have positive effects on health, healing, stopping the development of the disease. Functional foods have become more valuable because of their positive health effects. A number of studies have been carried out on plant-derived components that have positive effects on human health and have functional properties in food. Phytochemicals, defined as biologically active compounds (vegetable, fruit and cereals) with positive health effects, play an active role in functional foods. The main components that are useful in many aspects of human health and used in functional foods; phenolic compounds, thiols, quaternaryoids and tocopherols. In this study will be given information about the phytochemicals found positive effects on human health.
Keywords: Cereal, functional foods, fruit, phytochemicals, vegetables.

BRM-196

DETERMINATION OF THE EFFICIENCY OF TOXIN BINDERS IN RUMEN IN VITRO CONDITIONS

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ABSTRACT:

This study aims to determine the effectiveness of organic, mixed and inorganic toxin binders (TBs) used in cattle total mixed rations (TMRs) on aflatoxin B1 (AFB1) using in vitro conditions. The 20 most commonly used TBs were divided into 3 groups according to their organic, mixed and inorganic content. "Ruminal medium", which is created with the help of rumen fluid, was used in the study. A total of 114 samples comprised of control and experimental groups were analyzed. The samples were spiked with 10 □g kg-1 AFB1 in the presence or absence of various TB and the effectiveness of TBs were determined using the analytical method. The analytical method based on immunoaffinity column (IAC) clean-up followed by high performance liquid chromatography coupled with fluorescence detection (HPLC-FLD) were used. The inorganic TBs were more effective against AFB1 in rumen in vitro conditions, when compared to mixed and organic TB. Moreover, the efficacy of TBs was increased with the extension of digestion time. Inorganic TBs were found to bind up t65% of AFB1 in vitro conditions within 24 hours. As a result, it is suggested that the use of inorganic TBs in feeds for the reduction of detrimental effects of AFB1 in animal health. It is thought that this study will provide a more conscious approach in the feed and livestock sector in the control of mycotoxin. However, more studies and long-term evaluation are needed.

Keywords: Toxin binders, Ruminal medium, HPLC-FLD, aflatoxin B_1, in vitro conditions, Total mixed rations, mycotoxins

BRM-197

DETERMINATION OF AFLATOXIN B1 IN DRY BEEF MEAT USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY WITH FLUORESCENCE DETECTION (HPLC-FLD) METHOD

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ABSTRACT:

Aflatoxin B1 (AFB1) is a mycotoxin produced by Aspergillus spp. It is known that AFB1 causes carcinogenic, hepatotoxic and immunosuppressive effects on humans. In addition, toxins accumulate in animal tissues (liver, muscle) and constitute a potential hazard source for human health. Dry aging is a method where meat is aged uncovered in under controlling environment conditions in a refrigerated room for a few weeks. It is thought that the presence of aflatoxins residues in meat is a result of feed contamination. Mold reproduction and toxin presence can be observed depending on the uncontrolled humidity, temperature, air circulation and lack of hygiene during cutting, storage of the meat. The acceptable aflatoxin limit is 20 ppb in the USA. In our country the meats served for consumption are not examined for aflatoxin. Also, there is no legal limit for aflatoxin in dry aged meat. The aim of this study is to develop a method for the presence of AFB1 determined by the HPLC-FL in dry aged meat suitable for commission decision 2002/657/EC. In accordance with this purpose; parameters such as specificity, linearity, detection limit (LOD), quantification limit (LOQ), accuracy and precision were evaluated. Linearity; was determined by analysis of seven standard solutions. The correlation coefficient (r2) was obtained as >0.998. LOD and LOQ were determined as 0.16 ng/mL and 0.54 ng/mL, respectively. Accuracy and precision analyzes were performed at three different concentration levels (0.5, 2.0 and 5.0 ng / mL). Recovery was found as 89.74%. Reproducibility (RSDr%) and repeatability results (RSDR%) were calculated as 7.19% and 8.95%, respectively. AFB1 was investigated in 5 control and 20 experimental 28 day dry aged meat samples obtained from two different meat plants. In the samples, the level of AFB1 was not observed at detectable limit. As a result, it was determined that the method applied in the determination of the presence of AFB1 with HPLC-FLD indry aged beef was a valid method for the validation parameters. AFB1 was not found to be detectable level during the procedure.

Keywords: Aflatoxin B1, Beef, Dry aging,HPLC-FLD, Validation

FSE-198

ROLE OF THE COOPERATIVES ON RAW MILK MARKETING, A CASE STUDY OF AKSARAY PROVINCE

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ABSTRACT:

In order to develop dairy farming, which has a great importance in the husbandry, it is necessary to organize the farmers to make available them taking joint action. The organization structure of farmers in Turkey consists of producer associations, cooperatives and higher units. In Aksaray province, there are two higher units, which are Hay-Koop and Tar-Koop. Agricultural cooperatives, the total number of which is 70 and the total number of whose partners is 7000, work under the umbrella of these higher units. The best way for farmers is to produce and sell their milk based in joint organizations, through cooperatives. To take this opportunity it needs farmers' communication and unity. In this study, it was aimed to determine the role of agricultural cooperatives in raw milk marketing to find out solution of problems faced by the farmers. For this purpose, 90 questionnaires were filled with farmers, who are partner of an agricultural cooperative, by face to face method in Aksaray Province. Parametric and nonparametric analyses were performed. Finding of this study suggested that majority (95.6 %) of partners' sale their raw milk to cooperatives. Cooperatives collect stors and sale milk to the big dairy plants in desired standard. Payments are made to partners monthly in bulk.91.1% of partners is pleased by this method of payment. Moreover, it was determined that 64.4% of partners do not find the sale price of raw milk, which is 1.02 Turkish Lira, enough.

Keywords: Livestock Cooperatives, Milk Marketing, Aksaray Province

FSE-199

MILK AND MILK PRODUCTS MARKETING CHANNELS IN TURKEY

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ABSTRACT:

Turkey produces 18.6 million tons milk equal to 2.3% of the world total milk production which is 799 million tons (FAO, 2014). In the year 2016, total milk production of Turkey was 18.8 million tons, composed of cow milk (90.79%), sheep milk (6.28%), goat milk (2.59%) and buffalo milk (0.34%). Moreover, about 50% of total milk production, which accounts for 9.2 million tons of milk, was processed by the dairy industry. While the rate of transferring of produced cow milk to the industrial sector was over 90% in Aegean and Marmara Region, it was 54% in Central Anatolia and about 4% in Eastern Anatolia Region. The majority of the produced milk is evaluated as drinking milk, yogurt and cheese. Drinking milk production in our country is 1.4 million tons and rest of total milk production is converted to milk products. According to Turkish Statistical Institute data, drinking milk consumption per capita in the year 2016 is 17.1 kg, while per capita milk equivalent consumption is around 259.3 kg when manufactured milk products are included. Milk produced in livestock enterprises in Turkey can be sold directly to consumers as street milk or dairy products produced at home. In addition to this, dairy cooperatives, creameries and dairy factories collect milk directly from the producers and then process into drinking milk and milk products. After that, these products are delivered to consumers through wholesalers and retailers. In this study, the marketing channels of milk that enable the producers to reach the ultimate consumer were examined.

Keywords: Milk, Milk Products, Milk Marketing, Marketing Channels.

FSE-200

BOVINE DAIRY FARMING IN IGDIR PROVINCE

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ABSTRACT:

Dairy farming is source of milk production, which is one of the sources of animal protein that has vital nutrients, which are necessary for healthy and balanced life, as well as providing livestock fattening material. In Igdır province, bovine dairy farming has big precaution in terms of regional economy with its share of 44.5% in bovine animals. The main material of the study is the data of the Turkish Statistical Institute (TURKSTAT). It has also been benefited from similar work previously done on the subject. In this study, the numbers of bovine animals and milk production in Igdir province were examined between 2008-2016. While the number of animals that gives milk in Turkey in 2008 was 4.1 million heads, this figure rose to 5.5 million heads in 2016. In Igdir province, the number of animals with 29.1 thousand heads in 2008 increased to 48.2 heads in 2016. It is seen that this figure increased 1.6 times in total. Parallel to this increase in the number of bovine animals in the same period, the production of bovine milk, which is approximately 11.3 million tons in 2008 in Turkey, increased by 1.49 times and reached to 16.8 million tons in 2016. In parallel with this increase, milk production of Igdir province increased by 1.9 times and reached from 60.3 thousand tons, in the year of 2008, to 115.7 thousand tons in 2016. Incentives and supports made under the general farming policies have made important contributions to this increase. In this study, changes in the bovine dairy farming in the Igdir province were investigated in the light of the agricultural policies generally applied in Turkey.

Keywords: Bovine, Dairy Farming, Igdir

FSE-201

DETERMINATION OF NUTRIENT CONTENTS AND RELATIVE FEED VALUE OF GUAR BEAN (*CYAMOPSISTETRA GONOLOBA*) SILAGE

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ABSTRACT:

Guar bean (Cluster beans = *Cyamopsistetra gonoloba*) is an annual legume. It is widely cultivated in semi-arid regions such as India and Pakistan. Guar is an important plant because of the galactomannan gum containing in its structure. Guar bean has the potential to be roughage feed for ruminants because it is rich in leafs, highly productive and harvested 3-4 months after planting. However, due to the presence of hydrocyanic acid in the fresh state, consumption of animals is negatively affected. For this reason, it is emphasized to make guar bean silage and use in ruminant nutrition. In this study, it was aimed to determine the nutrient contents and relative feed value of silage made from guar beans grown in Samsun. In the silage making process, guar beans were harvested 5 cm above the roots and ensiled as 5 replication in the laboratory silo containers. It was found that guar beans silage had the dry matter contents were 25.5% , 3.54% crude protein, 0.64% ether extract, 11.86% nitrogen-free extract, 11.69% neutral detergent fiber and 8.32% acid detergent fiber. According to the calculated values on dry matter basis, it was determined that the dry matter digestibility of guar beans silage as 63.48%, dry matter intake 2.62%/ live weight and the relative feed value 128.98 with premium quality class. According to this, it was found that the roughage quality and nutrient contents of guar silage are acceptable. However, it is recommended that different additives should be added to ensiling of guar beans to improve silage quality.

Keywords: Legume, guarbean, relative feed value, ruminant, silage

MT-202

SOME DRY MEAT PRODUCTS CONSUMED IN THE WORLD

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ABSTRACT:

Meat is high nutrient value, rich in vitamins and essential amino acids. However, meat is prone to microbial deterioration if its water activity is high. Raw meat is very important to prevent deterioration of storage and storage. So, in old times people used sun drying method by salting or spicing meat. Thus, various dried meat products are formed in various parts of the world. Drying also increased the product range using various meats. In addition to slaughtered meat, the fish are also dried. Traditional savoury meat products are available in many countries, including North Africa, East Africa, China and Turkey. In warmer countries like North Africa and East Africa, there are various traditional products such as odka, qwanta, kilishi, biltong, charqui and çiroz. In Turkey, pastırma is a dried meat product that is coated with cement. Today, dried meat products are still consumed. It has been developed in old ways with new methods for drying meat. These methods are hot air, roller, vacuum, freeze and microwave drying methods. In this review, various dried meat products and drying methods consumed in the world are compiled.

Keywords: dry meat products, water activity, savoury meat products, drying methods

AH-203

DIVERSITY OF SOME BAT SPECIES (FAMILY VESPERTILIONIDAE) FROM MALAKAND DIVISION, PAKISTAN

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ABSTRACT

A 3-year survey extending from 2010 through 2013 was conducted in three districts namely Malakand, Dir and Swat was conducted to record the bat species belonging to the family Vespertilionidae. During the survey, four species of bats the Asian barbastelle (*Barbastella leucomelas*), the Asiatic greater yellow house bat (*Scotophilus heathii*), the Asiatic lesser yellow house bat (*Scotophilus kuhlii*)and the serotine (*Eptesicus serotinus*) were recorded from the study area.*E. serotinus* was captured from Dir and Malakand districts while *B. leucomelas* was captured only from Dir district. *S. heathii* and *S. kuhlii*were captured only from Malakand district. The forearm length of *B. leucomelas*, *S. heathii*, *S. kuhlii* and *E. serotinus* was 42.88 mm, 62.25±1.76 mm, 50.06±7.13 mm and 53.37±1.39 mm, respectively.

Keywords: *Barbastella*, *Scotophilus*, *Eptesicus*, Malakand, Pakistan

AP-204

COMPARISON OF BIOMASS YIELD, AND NUTRIENT COMPOSITION OF RYEGRASS (*LOLIUM PERENNE)*,SHAFTAL (*TRIFOLIUM RESUPINATUM*), AND OATS (*AVENA SATIVA*) IN NORTHERN AREAS OF KHYBER PAKHTUNKHWA PROVINCE, PAKISTAN

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ABSTRACT:

The study was designed to evaluate biomass yield, number of cuts per season and nutrient composition of three different fodders; namely Ryegrass, Oat and Shaftal in northern area of Khyber Pakhtunkhwa province (swat). For this purpose 20 plots (0.25 acre each) were selected in 5 different villages of swat and the seeds were sown in November.2016, according to their recommended seed rate and agronomical managements. Germination rate, height at every cut, fresh mass yield, days after sowing for harvest, and nutrient composition were measured. The result shows that there was no significant difference ($p>0.05$) in germination rate of these fodders. Whereas significant difference was found for days after sowing (DAS) of each harvest and the minimum days were recorded for ryegrass (86.1±16.4), oats (116.5) and for shaftal (129.4). Further the defoliation frequency for ryegrass averaged 30 days, as compared to 45 days for oat and 52 days for shaftal. Maximum numbers of cuts per season (Nov-June) were observed for ryegrass (5) compared to oats (3) and shaftal (3). Significant differences were recorded for height at all defoliations, at harvest 1 and 2 the maximum height in (cm) was recorded for Oat (78.46±14.2) followed by ryegrass (72.85±10.6 b) and shaftal (61.92±8.4 c). After second harvest ryegrass gave maximum height followed by shaftal and oat. In the first two cuts, biomass yield (tons/acre) of Oat was highest (13.68±4.6) followed by ryegrass (10.62±2.5) and shaftal (7.95±2.8). In subsequent defoliations biomass from rye grass was the highest (12.11± 2.45) followed by shaftal (6.87±1.82) and oats (4.55±1.2). The average biomass yields for three cuts were recorded, and maximum yield was found in ryegrass (36.39 tons/acre), followed by oats (34.43 tons/acre) and shaftal (29.27 tons/acre). In terms of crude protein and dry matter digestibility ryegrasses excelled (19.7% & 80.8%) shaftal (15.8% & 63.0%) and Oats (10.2% & 57.3%). It is concluded that ryegrass is the best choice as winter season fodder both in terms of quantity and quality for farmers in mountainous areas of Pakistan.

Keywords: Ryegrass, shaftal, oat, biomass yield, composition

ED-205

THE KEY TO SUCCESSFUL DAIRY CATTLE: DAYS IN MILK (DIM)/SAĞIMDA GEÇEN GÜN SAYISI

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ABSTRACT

In this study, the importance of "Days in Milk (DIM)", equivalent meaning in Turkish is "Sağımda Geçen Gün (SGG)" was investigated in dairy cattle. In this study, it was found that average days in milk (¯DIM) should be 160-170 days in well-managed herds. However, it is emphasized that this value is about 250 days in Turkey dairy cattle breeders conditions and is in an undesirable level. It is expressed that it corresponds to a calving interval of about 1.5 years in Turkey dairy cattle breeders and that it corresponds to a calving interval of about 1.5 years in Turkey dairy cattle breeders and that milk yield at farms is lower. Percentage of DIM (DIM %) was also considered as the percentage of pregnant animals in the first 150 days. It is expressed that the percentage of pregnant animals in the first 150 days should be 100% and the successes of herds should be evaluated according to this criterion.
Keywords: Days in Milk (DIM), Sağımda Geçen Gün Sayısı (SGG), Percentage of DIM (DIM %), dairy cattle breeding

Başarılı Süt Sığırcılığının Anahtarı: Days in Milk (DIM)/Sağımda Geçen Gün Sayısı Özet

Bu çalışmada “days in milk (DIM)” ya da Türkçe karşılığı olan “sağımda geçen gün sayısı (SGG)” kavramlarının süt sığırcılığı açısından önemi ele alınmıştır. Bu kapsamda sağımda geçen gün sayısı ortalaması ki bunun iyi yönetilen sürülerde 160-170 gün olması gerektiği ifade edilmiştir. Bununla birlikte, bu değerin Türkiye süt sığırı yetiştiricileri koşullarında yaklaşık 250 gün olduğu ve istenmeyen bir seviyede olduğu vurgulanmaktadır. Ancak bu değerin Türkiye şartlarında 250 günü bulduğu ve bunun da 1.5 yıla yakın bir buzağılama aralığına karşılık geldiği ve süt veriminin de olması gerekenin altında olduğu ifade edilmiştir. SGG yüzdesinin (% SGG; % DIM) de ilk 150 günde gebe hayvanların yüzdesi olarak değerlendirilmiştir. İlk 150 günde gebe hayvanların yüzdesi % 100 olması ve sürülerin başarısının bu kritere göre değerlendirilmesi gerektiği ifade edilmiştir.
Anahtar Kelimeler:Days in Milk (DIM), Sağımda Geçen Gün Sayısı (SGG), SGG yüzdesi, süt sığırcılığı

ED-206

THE EFFECTS ON FORAGE VALUES OF PELLETING BY USING DIFFERENT ADDITIVES OF SUGAR BEET HEAD AND LEAVES

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ABSTRACT

This study was carried out with the aim of determining of using sugar beet head and leaves (SBHL) pelleted with different additives in animal nutrition. In this study, two feed types (pelleted-granulated) were used and four treatment groups (control, urea (2.5%), molasses (7%) and urea+ molasses (2.5%+7%) were formed. The nutrient contents, relative feed values (RFV) and in vitro true digestibility (IVTD) were determined in all groups. The randomized parcels experimental design was used in statistical analysis. In present study, it was determined that fresh form had higher nutritive value and also all the groups had higher RVF and forage quality. Furthermore, it was determined that pelleted form with molasses addition had higher forage quality for all the forms except for fresh form and pelleting had positive effect on IVTD. It was concluded that dried SBHL could be used as forage source in animal nutrition, use of additives increases the feed value and pelleting has positive effects.

Keywords: Sugar beet head and leaves, pellet, digestibility, molasses, urea, relative feed value

ED-207

EGG PRODUCTION AND EGG QUALITY TRAITS OF BREEDER PHEASANT FED DIETS SUPPLEMENTED WITH DRY OREGANO (*ORIGANUM VULGARE SUBSP. HIRTUM L.*) AND/OR NETTLE (*URTICA DIOICA L.*) LEAVES

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ABSTRACT:

This study was conducted to determine the effect of dry oregano (*Origanum vulgare* subsp. *Hirtum L.*) and/or nettle (*Urtica dioica L.*) leaves powder supplementation in diets on egg production and egg quality characteristics of breeder pheasant (*Phasianus colchicus*) at the end of their laying period. Eighty four breeder pheasant layers at the age of 55 weeks were randomly allocated to one of four treatments with three replicates of six female and one male breeder per treatment in a completely randomized design. The birds were fed standard layer diets control (0 g/kg), 10 g/kg oregano leaf powder (1% KY), 10 g/kg nettle leaf powder (1% IY) and 5 g/kg oregano+5 g/kg nettle leaf powders (0%,5KY+0%,5IY) for 8 weeks period. The results showed that dry oregano and/or nettle leaf powder supplementation did not have significant (P>0,05) effects on body weight, livability and feed efficiency while 1% IY supplementation had effect on feed intake and egg weight towards increasing (P<0,05). Overall, there were no differences among groups in external egg quality parameters, except egg shell thickness and egg shell weight (P>0,05), while significant increase in 0%,5KY+0%,5IY group was observed in albumen pH of internal egg quality. As a result of research, it could be said that only 1% IY supplementation in a breeder pheasant's diet did change the egg production performance of layers and there is only a positive effect on egg weight and egg shell quality increase which could contribute to efficiency of producing hatching eggs.

Keywords: Breeder pheasant, Oregano leaf, Nettle leaf, Egg production, Egg quality, Antioxidant activity

FSE-208

THE EFFECT OF EXTENSİON TOOLS TO TECHNOLOGY USE IN DAIRY FARM IN KONYA

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ABSTRACT:

Because of the intensive use of technology in dairy farm, data were collected from 128 business operated in 5 towns representing Konya province in terms of social, economic and cultural aspects in order to determine the effect of extension tools affecting the level of technology usage in enterprises. The data were analyzed according to purpose. Analysis of the data was done according to the chi-square method. Milking automation, cooling tank, automatic watering, feed box and camera were taken as new technology. Information on dairy farm using milking automation are obtained from internet and university staff ($p < 0.05$) from the vendors organizing seminars,congresses, conferences, agricultural trainers they took part in ($p < 0.01$). Information on the businesses using cooling tanks is obtained from internet, agriculture directorates ($p < 0.01$) and agricultural dealer training ($p < 0.05$). The enterprises using feed box get the information from seminars, congresses, conferences ($p < 0.01$), trainings of agricultural dealers ($p < 0.05$) and veterinarians ($p < 0.01$). The enterprises using automatic watering get the information from agriculture provincial directorates and veterinarians ($p < 0.01$). The enterprises using camera get the information from seminars, congresses, conferences and internet ($p < 0.05$). As a result, it has been concluded that the use of new technologies by the producers is effected by university staff, internet, veterinarians, agriculture directorates, seminars, congresses, conferences, agricultural dealers training.

Keywords: Konya Dairy Farm, Technology, Extension Tools

ED-209

USAGE OF FODDER BEET IN DAIRY FARMING AS COARSE FODDER

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ABSTRACT:

Fodder beet, besides high yield rates and low production cost values, is not only a fodder in dairy farming but also a good source of energy; and it can be digested in high values and is delicious. Fodder beet can be produced in many places in Turkey thanks to country's availability for its required climate and soil conditions. Organic production in fodder beet may show differences according to climate and production techniques. Sowing dates and the length of development season affects yield and quality of harvest and fodder beet can resist the excessive soil salinity better when compared to many other plant species. Fodder beet both as fresh and dry fodder has high rates of yield per decare. According to this reason it should be more common. Tuber of the beet can be stored for approximately 4-5 months. In dairy farming it contributes to the yield of milk.
Keywords: fodder beet, dairy farming, quality, yield of milk

FSE-210

PROMOTING EFFECTIVE COMMUNITY MEDIA SERVICES FOR GENDER EQUALITY AWARENESS FOR ENHANCED AGRICULTURE AND FOOD SECURITY EAST AFRICA

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ABSTRACT:

Enhancing community media capacity can strengthen gender mainstreaming for better agricultural outputs for sustainable food policy in Africa. Universities have a critical role to spur the linkages among the private sector, governments, civil society organizations (CSOS), local communities, households, and individuals to boost agricultural productivity. The objectives of this study were to explain the::issues in gender mainstreaming for better agricultural productivity; role of **c**ommunit**y** radio in developing gender mainstreaming outreach for food policy; national and East African Community (EAC) food and nutrition policy strategies, and the impacts of climate change and variability on local communities' agricultural outputs in view of the SG 2 targets and indicators in the EAC sub-region; assess the EAC climate policy regarding adaptation and mitigation priority areas for agriculture; and promote sustainable agriculture. to end hunger, achieve food security, improved nutrition, and promote sustainable agriculture.. This review involved relevant searchers from internet, national policies, programs, projects and national action plans. The data obtained were summarized to inform this paper. Gender equality is vital for achieving strategic gender needs in a continent which is struggling to achieve the **S**DG 5 targets. Policies which are gender sensitive will accelerate prospects for the attainment of the **S**DG 2. Gender equity campaigns involve creating, raising, and sustaining positive behavior change. Gender mainstreaming research can deliver effective public campaigns for the much needed better national agricultural productivity and production outputs. There are still multiple cases of unresolved basic policy, research, information, innovations, funding, and north-south gaps. Women contribute to the bulk of the household food security status in Uganda and across Africa. Gender equality and equity mainstreaming is vital for sustainable agriculture in East Africa for better family and local community livelihoods.

Keywords: Agriculture, gender equality mainstreaming, media, policy, SDGs, productivity

PH-212

REVIEW ON THE ENVIRONMENT AND HUMAN HEALTH EFFECTS ONWORKERS IN ANIMAL'S BARNS AND CONCENTRATED ANIMAL FEEDING OPERATIONS

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ABSTRACT:

All the Workers in the fields of animals barns units is related with an introduction to noteworthy levels of natural clean and endotoxins with the most noteworthy fixations found in Cows houses, though values found in dairy and in cows cultivating are much lower. Comparing to this is an abundance of business-related respiratory side effects in swine ranchers. A dose-response relationship exists amongst indications and number of working hours. Longitudinal examinations have shown a quickened decrease of lung work in agriculturists sufficiently extensive to cause clinically noteworthy infection in a few ranchers. In view of an extensive number of individuals required in cows cultivating and the long working hours, cows cultivating has risen as the major respiratory issue in cultivating. Trial thinks about to show that introduction must be brought generously down to maintain a strategic distance from intense impacts and longitudinal investigations exhibit that loss of lung work happens in non-smoking swine ranchers without respiratory side effects and that quickened decrease in lung work happens underneath endotoxin focuses in tidy (100 ng/m^3) proposed as a sheltered limit.The most Studies of *Adverse Health Effects from Specific Exposures* found in *Concentrated Animal Feeding Operations* (CAFO) Emissions they Described as Ammonia, Hydrogen Sulfide, Particulates, Bioaerosols and Volatile Organic Compounds, Ammonia is both a component of animal waste and released in waste treatment processes. Well recognized as a human toxin, the current OSHA PEL for ammonia is a TWA of 50 ppm (also its odor threshold), although The Hydrogen sulfide is one of the most important of the gases arising from the storage, handling, and decomposition of animal wastes. Smelling like rotten eggs also The air in CAFOs is contaminated with high concentrations of particulates, approximately one-quarter of which is protein; about one-third of suspended dust is considered respirable (< 10 microns in diameter, PM10). The Environmental impacts related with an inward breath of poisons and bioaerosols are complex. Medicinal issues regularly connected with breathed in specialists incorporate respiratory sicknesses (asthma, extreme touchiness pneumonitis, mechanical bronchitis), cardiovascular occasions (sudden demise related to particulate air contamination), and neuropsychiatric conditions (because of smell and also deferred impacts of poisonous inward breaths).

Keywords: Human health, Cow, Ammonia, Hydrogen Sulfide, Particulates, Bioaerosols

FSE-213

DAIRY SCIENCE PARK, CONNECTING RUMI, IQBAL, TOLERANCE AND UNSDGs

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ABSTRACT

The biggest of issues being faced by the world today are anarchy, lack of tolerance and giving no room and space to others. Hundreds and thousands of organizations and societies have come into being only in order to ponder over these issues and to somehow make this world a peaceful place to live in and theoretical as well as practical efforts are being made in this regard. Different seminars, workshops, training sessions and other programs are being conducted all over the world so that people may be motivated and taught to be more peaceful, cooperative and live in co-existence with other by creating space for those who are different to them.

Normally lack of tolerance prevails in societies where there is lack of justice and law and order situation is unspeakable. So, in this regard Dairy Science Park has also decided to play its role and has arranged series of seminars in this regard out of which three are scheduled in Pakistan and one is to be held in the famous Trukish City of Konia.

Konia city has been dwelling place of MowlanaRoomi and the world is aware of his teaching of love, tolerance and respect for each other. The Masnavi of Roomi is famous in East and West alike and it has been translated into Arabic, Tarkey, Pashto, Bangali and English languages. On the other hand the philosophy of Allama Muhammad Iqbal has also been highlighted in this article whose wise poetry has attracted people of the globe.

The common characteristics of their poetry was exactly the same point that through love, respect for each other, tolerance and by creating room for those who are different from us we can sustain peace in this world.

Dairy Science Park was established keeping in view the philosophy of these two great poets. This institution on hand, has made it easy for people to access to Halal food and on the other hand, has played its role against terrorism by providing business and job opportunities to people hence refrained them from becoming a useless tool at the hand of the terrorists. It is striving to motivate people and to engage them in the industry of Dairy Form and thus to keep them away from harmful, negative and illegal activities.

THE IMPACT OF SALT STRESS ON GERMINATION, GROWTH AND ONTOGENY OF BARLEY (*HORDEUM VULGARE L)* GENOTYPES FROM ARID AND TEMPERATE REGIONS

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ABSTRACT

Plants growing in arid regions compared to temperate regions often suffer from high shoot temperatures, low shoot water potentials, low turgor pressures, and high salinity in the rhizosphere. To investigate which tolerance mechanism these genotypes acquired/adapt to avoid stress in these areas a number of genotypes cultivated in arid and temperate regions were studied. These include Local (an uncharacterized landrace grown in south western Pakistan), Soorab-96 and Awaran-2002, both elite cultivars developed by ICARDA and commercially grown in Pakistan, and Optic an elite European cultivar. These genotypes were grown in hydroponics system having ¼ strength Hoagland's solutions with a range of salt concentrations under controlled light and temperature conditions. Measurements on germination, growth, and yield suggested that landrace Local is significantly least affected by high salinity compared with lines Soorab-96, Awaran-2002 and Optic. There are different views about halo-tolerance mechanisms one among tolerance mechanism is avoidance. However, conclusions from this study established that landrace Local tolerated abiotic stresses due to its genetically built-in ability, not adapting avoidance mechanism. In this work halo-tolerant and halo-sensitive barley genotypes were first time studied from seed to seed in a range of salt concentrations to establish whether there is any relationship between halo-tolerance and changes in ontogeny in barley genotypes. There is some evidence that long term exposure of plants in the preceding generations to moderately high salt concentrations (e.g. 100 mM NaCl) improves barley halo-tolerance in succeeding generations, i.e. halo-tolerance has a trans-generational, epigenetic basis, but there was also evidence that the improved halo-tolerance in the Local genotype was partly genetic.

Keywords: salt stress, germination, barley, genotypes

AP-215

FINANCIAL REFLECTION OF FERTILITY DISORDERS IN DAIRY HERDS OF KAYSERI PROVINCE, TURKEY

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ABSTRACT:

This study aimed to evaluate some fertility parameters (age at first calving-AFC, calving interval-CI and number of insemination per conception-NIPC) of Kayseri Dairy Breeding Association members and calculate the financial reflection due to deviation from target levels of these fertility parameters. In the study, data of 1705 Holstein cows from 196 different dairy herds were took into account. As a result, average AFC, CI and NIPC were calculated as 821 days, 403 days and 1.8 insemination/conception and deviations from target level were determined as 91 days, 38 days and 0.1insemination/ conception respectively. As a result, average financial losses due to 1 day delay of AFC and CI calculated as 23.0 TL/day (6.6 US$) and 19.5 TL/day (7.5 US$) for current prices of 2017 year. Consequently, total financial losses due to deviations from target levels for AFC, CI and NIPC were calculated as 5.169.474 TL (1.481.949 US$). Financial losses due to fertility disorders should be reduced and by this way profitability of dairy farms in Kayseri might be increased.

Keywords: Dairy, fertility disorder, financial loss, Kayseri.

EFFECT OF LIVE YEAST AND ESSENTIAL OIL ADDITION TO DAIRY CATTLE RATIONS ON PERFORMANCE AND MILK QUALITY

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ABSTRACT

This study was conducted to determine the effects of live yeast and essential oil addition to diet on performance and milk composition traits in dairy cattle. In the study, a total of 120 Holstein cows, with 2nd and 3rd lactation period were equally distributed into four treatment groups. Treatment groups were as follows; 1) Control, (C, no yeast and essential oil addition), 2) vegetable essential oil mixture, (0.10 g/day/cattle) 3) Live yeast, (LY, *Saccharomyces cerevisia*, 10 g/day/cattle, $4x10^9$ cfu/g) 4) EO+LY (0,10 g/day +10 g/day/cattle). The trial was lasted for 16 weeks and traits were determined each two weeks (8 measurements). Body weight, milk yield and feed efficiency (feed/milk) were not influenced by the treatments. In the EO group, in the 2nd and 3rd milking periods, dry matter content and in 2nd, 3rd, 7th and 8th periods milk fat content were higher than those of other groups ($P < 0.05$). In the 5th, 6th, 7th and 8th milking periods, protein of LY + EO group was lower than other groups ($P < 0.05$). The number of somatic cells in the milk was the highest in group C and significantly lower in group EO ($P<0.05$). In conclusion, essential oil addition to dairy cow diets may improve milk quality.

Keywords: Dairy cattle, live yeast, essential oil, performance, milk quality

ED-217

EFFECT OF VARIOUS STABILIZERS ON THE CONSISTENCY OF TOMATO KETCHUP AT DIFFERENT TEMPERATURE OF COOKING

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ABSTRACT:
The present research was conducted to evaluate the effect of various stabilizers on the consistency of tomato ketchup at different cooking temperature. The samples were analyzed to find the stabilizers effect on physico chemical properties of moisture content, total soluble solids (TTS%), ash%, total acidity% serum loss percentage were analyzed and data parameters regarding sensory analysis such as color, flavor, texture, taste, and overall acceptability were also analyzed and scored. The results recorded showed that the tomato ketchup prepared with the addition starch as treatment (T3) cook temperature at 90°C showed highest moisture (77.65), Ash (2.96), total acidity (1.25), pH (3.64), color (7.58), flavor (9.25), texture (8.61), taste (8.55), and overall acceptability (7.10), score. The lowest values of TSS (28.65) serum loss (4.37) was recorded in tomato ketchup prepared with the addition of guar gum and starch as treatment (T5, T2) to observe their consistency which resulted non-significant at the cooking temperature of 60°C and 40°C were found for sensory analysis result were over scored moisture (56.08). TSS (28.65).Ash (2.37), total acidity (1.13).pH (3.43), the (7.06), flavor (5.71), texture (6.27), taste (7.33), palatability (6.88) and serum loss (3.68) were recorded. It is concluded that the tomato ketchup prepared with the addition of pectin stabilizer as treatment (T7) resulted better in over all consistency and stability at the cooking temperature of 90°C, in comparison with the addition of starch and guar gum (T1, T6) at the cooking temperature of 40°C and 60°C.
Keywords: Stabilizers, temperature, serum loss and quality.

ED-218

INPUT LEVELS AND MILK PRODUCTION COST IN DAIRY FACILITIES OF IZMIRPROVINCE NURSEL KOYUBENBE

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ABSTRACT

The present study was conducted to investigate input use levels and milk production costs of daily facilities of Izmir province. Ödemiş, Tire, Bayındır and Kiraz towns were included into the study since they constitute about 70% of province total production. Questionnaires were used to gather data about dairy facilities of the farmers. Number of farmers to be surveyed was identified as 67 through proportional sampling method. The facilities were separated into three size groups (with number of dairy cows 5-14, 15-49 and >50). Of the cost items, feed constituted 65.89% of total costs, labor 11.81%, amortizations 8.64%, veterinary and health 5.21%, repair and maintenance 4.14% and the others 4.31%. The cost per liter raw milk was calculated as 1.05 TL. On the other hand, sales price of one liter milk was 1.05 TL in 2016. The price was below the production cost of the dairy farmers. However, calves and state supports make dairy farming a profitable business.

Keywords: Dairy cattle, Milk, Productivity, Profitability, Raw milk cost, Izmir

AP-219

POSSIBILITIES OF USING PRICKLY CACTUS *(OPUNTIAFICUS-INDICA)* PEAR IN RUMINANT ANIMAL FEEDING

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ABSTRACT:

The increase in feed prices and need for forage lead animal breeders turned our country farmers to think about alternative feed resources. In this regard, the tendency towards alternative feed sources with high nutrient content, which are not used in human nutrition, has increased. The prickly cactus pear *(Opuntia ficus-Indica)*, which is one of these alternative feed resources, can be used in human (fruits) and ruminant (branches and stems) nutrition. The fruits of *O. ficus-indica* contain water (92%), carbohydrates (4-6%), protein (1-2%) and minerals (1%). Fruits of cactus pear contain 50-75% carbohydrates on Dry matter basis and protein content are 12.5-25% of DM. *Opuntia ficus-Indica* has high digestibility (69.6-82.9%) and it has important forage potential source in ruminant nutrition. Addition, it is known that Ca content of the prickly cactus pear has high level according to other forages but Mg content is normal. However, it is determine that nutritional content of *Opuntia ficus-Indica* was changed by factories such as harvesting time, climate, soil structure, fertilization etc. Throughout the World, *Opuntia ficus-Indica* was used to feed sheep, goats and cattle. The *Opuntia ficus-Indica* which has laxative effect was suggested to feed together with other forage like alfalfa hay and to limit water consumption. Thus, it reduces the passage rate of digestive system. In this study, the possibility of using prickly cactus as an alternative feed source in ruminant rations will be discussed.

Keywords: Prickly cactus pear *(Opuntia ficus-Indica)*, Sustainable agriculture, Ruminant feedig, forage

Participating organizations

International

1. DSP-UN Partnership – UNDESA New York
2. Chinese Academy of Agricultural Sciences, (CASS) China
3. Charles Sturt University Australia
4. International Livestock Research Institute Kenya8
5. Engormix.com Argentina
6. The International Society of Zoological Sciences China
7. Selçuk University Konya, Turkey
8. Sandia National Laboratories USA
9. Smith and Franklins Publishers UK
10. Teknokent Konya Turkey
11. Highway Conference Discovery System China
12. SETBIR Turkey
13. ASUD Turkey
14. HICDS China
15. Amanah Halal Research Centre Germany

National – Corporate

1. DSP Slaughtering Point, Bar Tehkal, Peshawar
2. Jan Arcade Meat Shop, Peshawar
3. Meat Park, Peshawar
4. Dairy Life, University Feed Mill
5. Mr Kamal Khan, silage industry
6. Reon Energy Solutions, Lahore
7. Ghazi Brothers, Lahore
8. DSP Innovations
9. Farmer's Sausage Company, Peshawar
10. Royal Dairies, Peshawar
11. CATTLEKIT, Lahore
12. Livestock Exporters Assoc Pak
13. Riaz Park, Bannu
14. Romer Labs, Pakistan, Rawalpindi
15. Asif and Co, Peshawar
16. Calves and Calves Pvt Ltd
17. ICI Pakistan Ltd
18. M Dairy Solutions Pakistan
19. Solve Agric Pakistan Ltd
20. Globe group of companies
21. Peshawar PCR Lab (PPL), Emergency Gate LRH, Peshawar

National – Development

1. SDGs Task Force, Khyber Pakhtunkhwa Provincial Assembly
2. Sustainable Development Unit, Govt of KP
3. Small and Medium Enterprises Development Authority Peshawar
4. Khyber Medical University, Peshawar
5. University of Agriculture Peshawar
6. Khyber Institute of Veterinary Sciences, Peshawar
7. SBBU, Sheringal
8. Veterinary Research Institute, Peshawar
9. CEBG, Military Farms Group Okara
10. Women University Mardan
11. Halal Research Council Lahore
12. Banking – the exclusive bimonthly magazine on Islamic Banking and Finance

Dairy Science Park - Conference Series

Dairy Science Park I - 2011 – Peshawar

Dairy Science Park II - 2013 - Peshawar

Dairy Science Park III - 2015 - Peshawar

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